

**Risk Assessment/  
Standard of Cover Document  
For  
The City of Springdale  
And  
The Springdale Fire Department**





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**Published: October 25, 2016**

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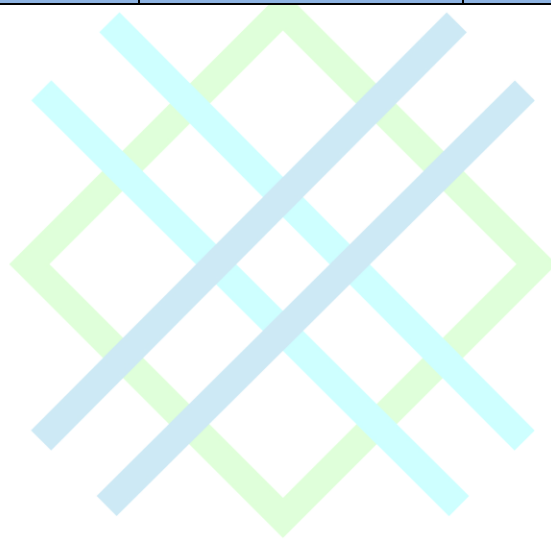
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## Document Revalidation Log

Revalidation Description	Originator	Version	Date
Created with 2015 data	Capt. McDonald, AM	One	October 25, 2016
2018 data updated. Risk assessment and risk level data added	Capt. McDonald, AM	Two	Feb 20, 2018
Data updated and revisions	Capt. McDonald, AM	Three	May 3, 2018



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## Introduction

The following document is the Risk Assessment/Standards of Cover (RA/SOC) for The City of Springdale and The Springdale Fire Department. The purpose of this document is to aid in identifying potential hazards and risks throughout the city and then assist the department in drafting a plan improve service and response times. This can be accomplished by analyzing past response times, risk assessments, and critical tasks. That information is then utilized to help set agency goals and expectations. This analysis provides insight into possible areas of improvement, as well as areas that meet or exceed citizen expectations and national fire service standards. The department's mission statement is: **The Springdale Fire Department exists to enhance the quality of life in Springdale by minimizing the devastating effects of fire, medical emergencies, and natural and artificial disasters.** The department's overall goal is fulfill our mission statement by protecting the lives of firefighters as well as the citizens they serve, and preserving the property of The citizens of Springdale in the most efficient and cost effective way possible. This is why a quality RA/SOC must be done.

A risk assessment allows the department to evaluate its risk based on the type and scope of the incident as well as identify major target hazards and provide the necessary personnel and apparatus needed for that specific type of incident. It also allows the department to divide the city into smaller response areas and identify the higher risk target hazards in those areas. By looking at the city as a whole and classifying the risks in advance, the department is able to prepare for some of the worst-case scenarios and ensure that it has the resources it needs to combat situations before they go beyond our capabilities.

To clearly define standards of coverage, the department should have a statement of policy regarding how risks are categorized with the context of the city. It must include an element of time: the maximum prescribed travel that indicates the level of service that is anticipated. Statements must also contain measurable outcome performance objectives. Such statements will identify response levels to identified risks, critical tasks that staffing plans must meet and desirable levels of distribution, concentration, and reliability.

The final RA/SOC document integrates all the analysis points into a clear, comprehensive statement of what has been found and what recommendations may be necessary for future improvement. The key points should be:

1. Documentation of Area Characteristics
2. Description of Agency Programs, Services, and History
3. All- Hazard Risk Assessment of the community
4. Current Deployment and Performance
5. Evaluation of Current Deployment and Performance
6. Plan for Maintaining and Improving Response Capabilities
7. Correlation of Standards of Cover Document to CFAI Accreditation Model

This document is also a crucial part in the process of obtaining accreditation through the Commission on Fire Accreditation International (CFAI). By entering into the accreditation partnership with The City of Springdale and through assessing these categories, the department will be able to set goals for the future. The department will also be able to use future funding in the most efficient way possible to provide the city with services that best suits the needs of its citizens.



## Industry Standards on Measuring Performance and the Relationship to Standards of Cover



The Insurance Services Office, Inc. (ISO) is a provider of statistical, actuarial, underwriting, and claims information and analytics; compliance and fraud identification tools; policy language; information about specific locations and technical services. The ISO conducts a full review of a community's public protection capabilities through a staff visit to the community to observe and evaluate features of the fire protection systems. The ISO uses a manual called the Fires Suppression Rating Schedule (FSRS) to evaluate four major areas:

1. Emergency Communications Systems-(10 points) a review to focus on the community facilities and support for handling and dispatching alarms for structure fires.
2. Fire Department – (50 points) a focus on the community's fire suppression capabilities. Based on first alarm response and initial attack to minimize potential loss. ISO reviews such items as: engine companies, ladder companies, deployment of fire companies, equipment carried on apparatus, pump capacity, reserve apparatus, company personnel, and training.
3. Water Supply- (40 points) an evaluation of the community's water supply system to determine the adequacy for fire suppression purposes. Hydrant size, type and installation, as well as frequency and completeness of hydrant inspection and flow-testing programs.
4. Community Risk Reduction-(extra credit of up to 5.5 points) an account of fire prevention code adoption and enforcement, public fire safety education and fire investigation.

Class	Points Credited
1	90.00 or more
2	80 to 89.99
3	70 to 79.99
4	60 to 69.99
5	50 to 59.99
6	40 to 49.99
7	30 to 39.99
8	20 to 29.99
9	10 to 19.99
10	0 to 9.99

Table 1: This table shows the ISO scoring system where one is the best 10 is the worst

The ISO and CFAI share these categories in their assessments of the department, including on-site inspections and documents such as the Risk Assessment/Standards of Cover. The processes of both ISO classification and accreditation benefit not only the department, but also the citizens and the city both residential and commercial. Although a higher or lower ISO rating does not guarantee higher or lower insurance premiums, insurance companies do utilize the scores when assessing risk in an area during the underwriting process. ISO scoring does have some impact on a businesses' decision when looking for places to conduct operations. In addition, ISO studies have consistently shown that, on average, communities with superior fire protection have lower fire losses than do communities whose fire protection services are not as comprehensive.

## ISO Classifications

ISO classifies a department on a scale of 1-10. The highest level a department may achieve is a one and a 10 is the lowest. Classes 1-8 indicate a fire suppression system with a credible dispatch center, fire department, and water supply and are classified according to the combined scores of those categories. Class 8b recognizes a superior level of fire protection in an area lacking a credible water supply system. Class 9 indicates a fire suppression system that includes a credible dispatch center and fire department but no credible water supply. Class 10 indicates the area's fire suppression program does not meet minimum criteria for recognition.

For some jurisdictions ISO can provide a split rating such as 2/2X or 2Y. In such areas, all properties within 1,000 feet of a water supply and within five road miles of a fire station are eligible for the first class. Properties more than 1,000 feet from a water supply but within five road miles of a fire station are eligible for the second class(X or Y). All properties that are over 1,000 feet from a credible water source and over five road miles from a fire station are class 10.



## Executive Summary

There are usually three reasons to evaluate or challenge existing levels of service; expansion, contraction of service areas, and change in risk expectations. Contraction is typically the result of a reduction in service area, a decline in risk or value, or a decline in available fire protection funding. Regardless of the reasons, elected officials should base changes in levels of service on empirical evidence and rational discussion leading to effective, informed policy choices.

One major issue, with which the fire service has struggled in the past decade, is defining levels of service. There have been many attempts to create a standard methodology for determining how many firefighters, fire stations or fire inspectors a community needs. However, the diversity of fire service challenges in each community has defied efforts to create a "one-size fits all" solution. To address this situation, the International Association of City Managers (ICMA) and the International Association of Fire Chiefs (IAFC) formed the Commission on Fire Accreditation International (CFAI).

One requirement to be accredited is to prepare a "Risk Assessment" and "Standards of Response Cover" plan during the self-assessment phase of accreditation. The Risk Assessment enables the department to evaluate risks and identify major hazards within the city and establish a plan to effectively handle those situations should they occur. The Standards of Response Coverage are those written procedures determining the distribution and concentration of fixed and mobile resources. This plan encompasses everything an agency should understand to prepare and determine resource deployment.

The accreditation process uses a "systems" approach to deployment rather than a "one-size-fits all" prescriptive formula. In a comprehensive approach, our plan should be able to match local need (risks and expectations) with the costs to provide various levels of service. In an informed public policy debate, The City Council "purchases" the fire and EMS protection (insurance) the community needs and can afford.

Creating a Standards of Response Coverage plan consists of decisions made regarding distribution and concentrations of field resources in relation to the potential demand placed on them by the type of risk and historical need in the community. The purpose of this document is to provide a standardized methodology for the development and review of a standard of coverage based upon several factors all of which are essential in the design of an effective response force.

In conclusion, this RA/SOC is a dynamic document that reflects the changing needs of the Springdale Fire Department and serves as a mechanism for constantly seeking opportunities for improvement. It is a key element in our plan to reduce risk to our residents and visitors. We are committed to providing the most effective services in a fiscally responsible manner and will continually evaluate our performance in the constant pursuit of improvement.

## About the City of Springdale

### Overview

The City of Springdale is located in the heart of the Northwest Arkansas Metropolitan Area. As of 2014 Census projections, the population was nearly 77,000 citizens, with over 500,000 in the entire Northwest Arkansas metro area. According to the 2000 Census, the population of the city was only 47,129 citizens. The city has experienced nearly 4% growth annually due to increased industrial production and a reasonable cost of living in the area. The daytime population according to the Northwest Arkansas Council increases to approximately 85,600 during normal business hours.

The city is located primarily in Washington County, but a small northern section of the city does extend into Benton County. It has a land area of nearly 47.250 square miles according to 2010 US Census data. Cities, smaller towns and communities surround the city of Springdale on all sides. Those towns are Lowell and Bethel Heights to the north, Johnson and Fayetteville to the south. To the west, the city shares a border with Tontitown, Elm Springs, and rural Benton County. To the east, the city shares its border with Sonora, Hickory Creek and Rural Washington County.

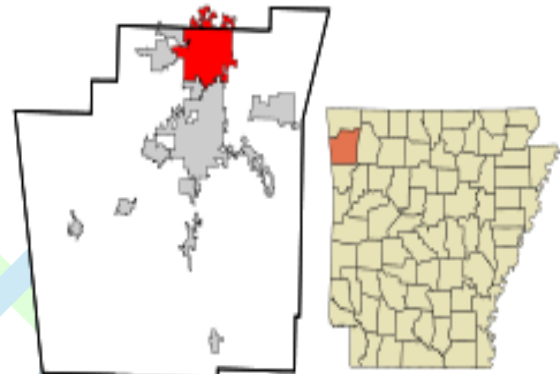


Figure 1: City of Springdale in Washington & Benton County



Figure 2: Historic Downtown Springdale marker located at the corner of Emma Ave and Thompson Street

Except to the east, the city is very limited in future land acquisition due to the close proximity of surrounding communities.

### City Governance Model

The City of Springdale operates within a Mayor/City Council form of government. The Mayor is responsible for day-to-day decision-making and manages seventeen department heads, including the Fire Chief. The Mayor and department heads work with the City Council to ensure that the voice of the citizens is heard.

Mayor Doug Sprouse has been in office since 2009. The Springdale City Council is the legislative body of the city, and consists of eight members who serve four-year terms. Various council members serve on all ten committees that encompass all aspects of the operational functions for the city. There are two City Council members assigned to each of the four wards; although, Springdale voters elect all members regardless of the voter's registered ward.

The City Council meets on the second and fourth Tuesday of each month. All major purchase decisions go through The City Council and funds are usually planned and compiled during annual budget preparations or, if necessary, out of the Capitol Improvement Project (CIP) fund. Department funding is generated through city sales tax and appropriations at city, county, and state level from property taxes and grant funding. The city clerk/ treasurer's office controls funding and monitors all expenditures via budgeting, purchase orders, and receipts. Department budgets are conventional line item budgets that begin on January 1 of each year. The City Council approves each department budget before the end of the previous fiscal year. State statute requires that all purchases over \$20,000 follow a formal bidding process.

### ***City of Springdale Demographics and Information***

The City of Springdale's total population is nearly 77,000 citizens as of 2014 U.S. Census estimates. With an area of 47.250 square miles, the city's average population per square mile is approximately 1,669.8 persons per square mile. The City of Springdale has a strong agricultural background and at the same time is attracting both commercial and industrial growth that is expanding into some of the more traditional agricultural areas. As you can see in the population density map, Appendix A, the city's population is most dense in the heart of the city; however, population dense areas can be found throughout the city. Although Springdale is a heavily residential area, you can see by the zoning map in Appendix B that there are also many different commercial, industrial, and agricultural areas as well. Industrial zones have been growing along the eastern portion of the city and there are many large facilities that are locating to the city's new industrial park off Huntsville Avenue.

There are also two large sports complexes in The City of Springdale. Arvest Ballpark is a minor league facility capable of holding 7,300 citizens during a ballgame and possibly more during concerts and other large events. Arvest Ballpark is also home to some events during Bikes, Blues, and BBQ. This regional 4-day motorcycle rally brings in an estimated 400,000 people leads to increased traffic and accident potential. Parsons Stadium is home to the Rodeo of the Ozarks a 4-day professional rodeo performance. Parsons Stadium also hosts other events including demolition derbies, monster truck events, carnivals, and high school rodeo events. Seating at the stadium can reach 9,000 people, and organizers are planning renovations to increase seating and cover the arena area. The city also has seven large parks, most with sports facilities of some type. Those parks are located throughout the city and range in size and function, from large sports complexes, to skate parks, to a park with smaller more family friendly playground areas with the Springdale Public Library, Springdale Aquatic Center, and the Springdale Youth Center neighboring it.

Many of the industrial complexes within the city are related to poultry production, as Springdale is the corporate home to two of the largest poultry producers in the country, Tyson Foods Inc. and George's Inc. These two companies are the largest employers in the city. The table on the next page lists the 10 largest employers in the city according to the Springdale Chamber of Commerce:

Ranking	Employer	Number of Employees
1	Tyson Foods Inc.	4,300
2	George's Inc.	2,500
3	Springdale Public Schools	2,235
4	Cargill Meat Solutions	1,200
5	Northwest Medical Center	900
6	Rockline Industries	535
7	A.E.R.T.	500
8	Harps Food Stores	495
9	Kawneer	465
10	Multi-Craft Contractors	400

Table 2: Top Ten Employers within the City of Springdale. Source Springdale Chamber of Commerce

The growing urban areas of the city as well as the rural areas that are projected to see growth in the near future makes decision making difficult for the department when planning for response times. The department's goal is to deliver the same service to all citizens in the most efficient and timely manner possible. Yet at the same time, the department must utilize its units to respond to the areas with the highest likelihood of an incident. This has traditionally been in the more urban areas towards the center of the city and this can lead to longer response times in lesser-populated areas. While no one Citizen is more important than another is, the city and the department have a finite amount of funds and must utilize them to the best of their abilities. The city and the department must plan and be prepared for the future as urban sprawl increases into some of the more remote and rural areas of the city and call volume will most likely increase in these areas.

## Topography

Although the terrain of the city is not as treacherous as some of the more mountainous areas of the country are, there are several rolling hills throughout the city and surrounding areas. The city is located on the Springfield Plateau and sits at an elevation of 1,353 feet above sea level. Callahan Mountain is located on the north side of the city and has an elevation of 1,515 feet. Fitzgerald Mountain, Webber Mountain, and Price Mountain have elevations at just over 1,600 feet and are all located on the east side of the city. These mountains start just north of North Monitor Road and run south to Highway 412 East.

Springdale is mostly developed areas, but it does have some small areas of undeveloped forest and grassland in FMA 4 West, FMA 6, and FMA 2. The undeveloped areas are located next to developed areas of the city and contain livestock and mostly grasslands used for hay production.

The city only has one small lake inside the city limits, Lake Springdale. However, the city has two lakes that are along the border of Springdale; Lake Fayetteville to the south and Lake Elmdale to the west. Spring Creek runs east to west through the entire City and is the main water run-off collector for the city. There are two main flood-plain areas located in the western

portion of the city. The Spring Creek flood plain runs from just east of the Springdale Airport through the city to the north. The Brush Creek flood plain begins near Gutensohn Road and flows all the way to Lake Elmdale on the west side of the city. On the south side of the city, there are also two smaller flood plains where Clear Creek flows into Lake Fayetteville and its runoff creek.

Throughout the city, there are many different types of vegetation ranging from prairie grasses and hays, to mostly deciduous trees such as Oak, Birch, Maple, and Dogwood. Some coniferous trees also thrive in the area. The city's climate zone is temperate which allows for exceptional growth of a wide variety of plants.

### ***Climate***

The City of Springdale has experienced a variety of different types of weather over the past five years. Traditionally, the city experiences seasonal weather patterns with mild, wet springs and autumns; hot, humid summers; and mild to cold winters. However, at any given point in the year, the city may see extreme changes in temperature and precipitation. High winds and thunderstorms are a possibility at any time but are most prevalent from March to May. January to March usually have the highest chances of frozen precipitation.

Daily temperatures in the city can change in an instant. July tends to be the hottest month with an average high temperature of 91°F and low of 69°F with heat indexes staying well above 100°F. February is usually the coldest month with an average high of 45°F and a low of 26°F, and wind chills that are below freezing.

The city has an annual rainfall average of nearly 45 inches. The potential for local waterway flooding increases during our rainy season that usually runs from March to May. On occasion, the city can also experience drought conditions causing an increased potential for grass and brush fires. The last significant drought was in 2012.

Due to the variety of weather that Springdale may experience throughout the year, it is necessary to be prepared for a wide range of emergency responses including fire, wildfire, heat and cold emergencies, swift-water rescue, and urban search and rescue that may be associated with these weather events. The "Other Potential Risks" section, that begins on page 69 of this report, discusses specific weather related events and potentials.

### ***Population***

The population of the City of Springdale has changed greatly over the past 20 years. According to the 2000 U. S. Census, Springdale's population was only 45,798, and the racial and ethnic background of the citizens that made up the community was vastly different from what it is today. See Appendix C for a graphic illustration of Springdale's population based on its ethnic diversity and age groups. Between 2000 and 2010, the population increased from 45,798 to



67,766, and the Census Bureau estimated Springdale's populations to be 76,565 in 2014. That is an average population increase of nearly 4.86% per year. That is well above the national averages of 2 to 3%. According to the Urban Institute, the Northwest Arkansas Metro Area will have a projected growth of 58% by the year 2030. That is an increase of nearly 300,000, and Springdale will most like see the same percentage of growth during that time. These changes in population and diversity can bring many challenges to the department in terms of types of calls and responses.

The median age for The City of Springdale is 29.9 years of age. This is much lower than state and national averages of 37.8 and 37.9 respectively. Persons under 5 years of age make up 10.3% of the population. Persons under 18 years of age make up 32.6 percent, persons 18 to 65 years of age make up 48.3%, and persons 65 years and older make up 8.8% of the total population. The city is 50.3% female and 49.7% male. The city has a 70.8% high school graduation rate which is lower than the state average of 84.3%, and a 18.8% possess a bachelor's degree or higher which is lower than the state average of 20.6%.

### ***Diversity***

The city has a very diverse population base. While White/Non-Hispanic or Latino is the majority, over 35% of the city's population is of Hispanic or Latino background. Springdale is also home to the largest concentration of Marshall Islanders in the United States and is home to the Marshallese Consulate. The diverse population base makes for communication difficulties at times but, but it is an issue that SFD has been working to overcome by utilizing bilingual personnel and language line translation services.

### ***Income***

The City of Springdale has a median household income of \$41,385. That is well below the national average of \$53,482. It is the second lowest median income in the Northwest Arkansas Metropolitan area just above Fayetteville. The City of Fayetteville has a more temporary population due to the University of Arkansas, so the comparison is not a like for like comparison. Poverty in The City of Springdale is at 23.7% nearly ten percent higher than the national average of 14.8% and one of the highest in the Northwest Arkansas Metropolitan area. These factors, along with a nearly 50/50 owner occupied housing to rental housing comparison, make fire prevention very important due to the higher potential for of residential and commercial structure fires and the loss of life.

### ***Housing***

As of the 2010 Census, there were 25,614 housing units within the city. Of those, 50.6% were owner occupied which is almost 16% below the state average of 66.5%. The average household in Springdale has 2.99 people, which is higher than the state average of 2.53 people per

household. Median home value in Springdale is \$127,400 that is higher than the state average of \$109,000, but is well below the regional averages of \$145,000 to \$179,000 in neighboring Northwest Arkansas cities. Many of the homes in Springdale are newer construction, single story and single-family dwellings. There are very few buildings with basements in the area. Thornbury, Willow Bend and Harber subdivisions contain many of the largest homes in the city. Springdale is also home to many large multi-family housing units/apartment complexes including The Links Apartments, Chapel Ridge Apartments, Brookhaven Apartments, and many smaller complexes. Many neighborhoods throughout the city contain duplexes, triplexes, and fourplexes.

### ***City-Wide Development***

The City of Springdale has been working hard to improve development throughout the city, and recover financially from the devastating effects of the 2007 recession. The city lost a large portion of its tax revenue and struggled to return revenue numbers to pre-2006 levels until this past year. City leaders have worked diligently to attract businesses to the city and improve the quality of life for the citizens of Springdale. Through careful planning and execution, their efforts are starting to pay off.

The city has grown not only in population but also in land mass through annexations of properties located in both Benton and Washington County. The city has been working feverishly to provide municipal services to all recently annexed areas, but some areas still have an inadequate water supply. This disparity is due to a lack of hydrants and water mains that are necessary for tanker operations. Most of the area served by The Springdale Fire Department is developed property as you can see from the map in Appendix D. However, due to the recent annexations, The City of Springdale has seen an increase in rural/agricultural properties. The department has attempted to maintain the quality of service it provides to all areas of the city, but due to limited funding, lower population density, and low call volume it has been difficult to put stations and apparatus in some of the more remote areas to maintain response times similar to those in more centralized areas of the city.

Springdale is undergoing a revitalization of its downtown area and surrounding neighborhoods. On December 15, 2015, The City Council approved a complete three-stage revitalization master plan for the downtown area. This plan includes renovation or demolition of old and dilapidated buildings. The improvements include a park along The Razorback Greenway Trail and Spring Creek, new large offices for some of the major corporate businesses in the area, restaurants and other supporting businesses to accompany them, a new farmers market, and a new railroad museum. It is possible that the downtown revitalization plan will also include boutique type hotels. With new businesses moving into older buildings that were once a hazard to firefighting efforts, the buildings will have to be brought into compliance with current codes. These renovations will make it safer for both citizens and firefighters. The improvements in this area are also encouraging renovations to some of the older more dilapidated housing in the surrounding area.



Figure 3: Aerial Image of The Downtown Springdale revitalization area

The downtown revitalization is not the only project the city has implemented. To the north of Highway 412 and along Interstate 49, there is a significant amount of commercial development in progress or planned to begin this year. Since the Wal-Mart Supercenter on Elm Springs Road opened, several smaller businesses have developed around it. Sam's Furniture, a large-scale furniture store and warehouse, located off South 48<sup>th</sup> Street opened in May of 2016. In addition, there are plans for construction of more commercial buildings in this area. The Arkansas Game and Fish Commission, is set to begin construction on a 61-acre nature center and field office located off 40<sup>th</sup> Street, south of Wagon Wheel Road.

In 2014, an overlay district was established on the west side of the city in the area surrounding Arvest Ballpark. Occupancies are starting to move into the district. A Sam's Club opened in May 2017. Arkansas Children's Hospital opened their five-story in-patient facility was operational in February 2018. In addition, Northwest Arkansas Community College is scheduled to complete a satellite campus by 2019.

The majority of commercial businesses in the City of Springdale are located along Highways 71B and 412. These are the main north/south and east/west corridors of the city and there is a variety of different types of commercial

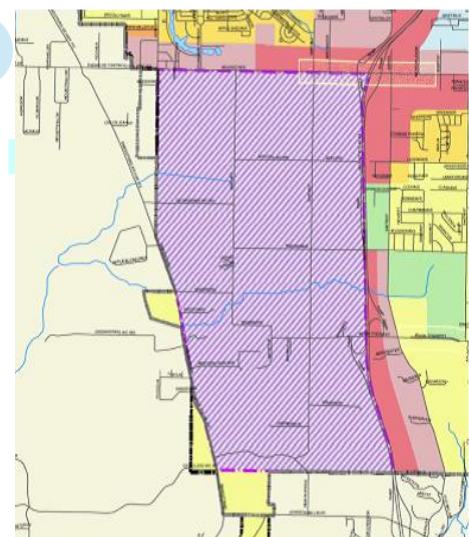


Figure 4: Map of the Arvest Ballpark Commercial Overlay District.



structures located along these highways. There are big box retailers such as Lowe's and Wal-Mart, numerous restaurants, medical clinics, and smaller strip-mall type occupancies. Northwest Medical Center, the city's main hospital is located on the east side of Highway 71B. Over the past five years, it has been undergone renovations and improvements to add to its capacity and improve aesthetics. It is one of the largest facilities in the city with two 6-story towers, a parking garage and smaller buildings surrounding it.

The east side of town is seeing growth in its industrial and technology parks located east of Highway 265. There are four different areas zoned for heavy industrial usage, and one area zoned for light industrial usage. In addition, a special 34-acre technology park caters to businesses with technology-based products such as NanoMech and Whitbeck Labs.

Something that all readers should take away from the demographic and development information provided is that although the total land area has increased and population of Springdale has increased by nearly 64.3% since the year 2000, the department has not added any additional fire stations since 1998. Other area departments are increasing their number of fire stations, but fire personnel operating out of only six fire stations are protecting the City of Springdale. The department has only added one firefighting company (Ladder 1) in the last 17 years. It is true that Stations 2 & 3 were relocated to improve response times, but the fact is that the city was provided with an overall level of fire protection that has been slowly decreasing since 1998 due to population growth and land annexation. In February 2018, Springdale voters approved a \$16 million bond to construct and equip three new fire stations throughout the city. These three stations will help to alleviate the strain on the department, but the department needs an additional station to achieve ideal service coverage and concentration.

## ***Transportation***

The City of Springdale relies heavily on road and highway transportation whether it is daily commuters in small passenger cars or large semi-trucks from Tyson Foods or J.B. Hunt Transport. Springdale roadways are laid out in a grid type pattern. Listed in order from east to west, the most widely traveled roadways running north and south are: Butterfield Coach Road, Highway 265, Powell Street, Highway 71B, Johnson Road, Gutensohn Road, Carley Road, 40<sup>th</sup> Street, and 48<sup>th</sup> Street. Highway 71B and Highway 265 have the highest amount of traffic going north and south. Listed in order from south to north, the main thoroughfares running east and west are Don Tyson Parkway, Highway 412 East and West, Huntsville Avenue, and Wagon Wheel Road. Don Tyson Parkway was constructed and Wagon Wheel Road was relocated and widened to accommodate increased traffic as these thoroughfares are two of the three main east/west corridors. Interstate 49 runs north and south through the western portion of Springdale. In November 2016, it expanded to a six-lane highway that runs from south Fayetteville to Bentonville. The proposed interstate project will eventually connect Kansas City, Missouri with New Orleans, Louisiana.

The Arkansas Missouri Railroad operates a railway that runs north and south through the industrial portions of the city. Many different types of rail cars travel the railway from passenger/excursion trains to commodity haulers to a small number of rail cars carrying hazardous materials. The department has a good working relationship with the railroad. Cooperative training exercises and exchanges of important information help the department prepare to handle most of the materials traveling via railway. Most of the major railway crossings in the city have automatic crossing arms to stop traffic.

The Springdale Airport, designated KASG, is located near the center of the city between Powell Street and Highway 265. It has one runway, and the tower is operated from 0600hrs until 2100hrs. There is an average of 171 aircraft operations per day at the airport with most of them being smaller general aviation planes. Various occupancies surround the airport including: The Jones Center for Families, two schools, Parsons Stadium, several large commercial warehouses, and residential single and multifamily complexes. The department has responded to crashes at or near the airport, but all have been minor up to this point. There is currently no Aircraft Rescue and Firefighting (ARFF) unit stationed at the airport, and the closest resource is located at Station 1.

Ozark Regional Transport is responsible for public transportation throughout the city. They operate a variety of different sized buses and Para-transit vehicles. In 2014, they transported over 300,000 passengers around Northwest Arkansas. They have stops located throughout the city including some of the busier retail locations. They have allowed the department to use their vehicles to train and prepare for large-scale incidents involving mass casualty and extrication incidents.

The Razorback Greenway Trail is a 31-mile bike/pedestrian trail that runs through five cities including Springdale. The city has two major trailhead/access points and other smaller access points along the greenway, but there are certain areas of the trail that are more remote and not easily accessible. The Razorback Greenway runs north and south and is currently the only major trail in the city; however, a second trail is currently under construction and parallels Highway 265. There are construction plans for other feeder bike trails in other areas of the city.

There are no major waterways used for transportation located near the City of Springdale. The only bodies of water within the city are Lake Springdale, small creeks that have various flows throughout the year and a few small ponds. Lake Elmdale is located on the western border of the city, and it has some small fishing boat traffic. Boats are not permitted on Lake Springdale or any of the creeks in the city. Beaver Lake/White River is an Army Corps of Engineers project that provides all water to Springdale and other surrounding cities. It is the largest body of water in the area with recreational water sports but no major water traffic. It is located approximately 5 miles to the east of the city.



## ***Water Supply, Distribution, and Operations***

The Springdale Water Utilities (SWU) distributes and maintains the Springdale Fire Department's water supply. SWU is a municipally owned non-profit organization that provides water and sewer to the City of Springdale and portions of the smaller surrounding cities. All water provided by the SWU is purchased from the Beaver Water District located on Beaver Lake Reservoir. The SWU system has a capacity of 26 million gallons of water at 50 psi. They have many water mains on a loop type system that is still capable of operating when portions of their system are damaged. There are "dead-end" water mains located in some areas of the city, and that information is available on the SWU website.

SWU is currently repainting all hydrants in the city with a reflective silver body and a bonnet color chosen in accordance with NFPA (National Fire Protection Association) Standard 291. This standard recommends that all hydrants be marked with a specific color to indicate available water flow. This allows the department to identify when there is a sufficient amount of water available for a fire or if there are any deficiencies in the water supply system. In addition, all hydrants are annually serviced and regularly maintained by SWU employees and flow tested as needed in accordance with NFPA 291.

The Springdale Fire Department is fortunate to have hydrants available throughout most areas of the city. Ample hydrants allow any of the first due units on an alarm to quickly establish a supply line between the hydrant and the fire ground. However, due to recent annexations and certain topography, there are a small number of areas where water tender operations must be utilized if a larger scale incident were to occur. SFD personnel have identified and documented those addresses. This file is located in the computer aided dispatch (CAD) system in the Dispatch Center, and it instructs the dispatcher to attach a tender assignment of two water tender trucks from mutual aid departments. SFD members have been instructed that if the closest water supply is over 2,000 feet away or water is unable to be supplied via relay pumping operations; the incident commander is to request a tender assignment. Fortunately, the department has not needed to utilize a tender water supply operation in the past three years.

(Continued on Next Page)

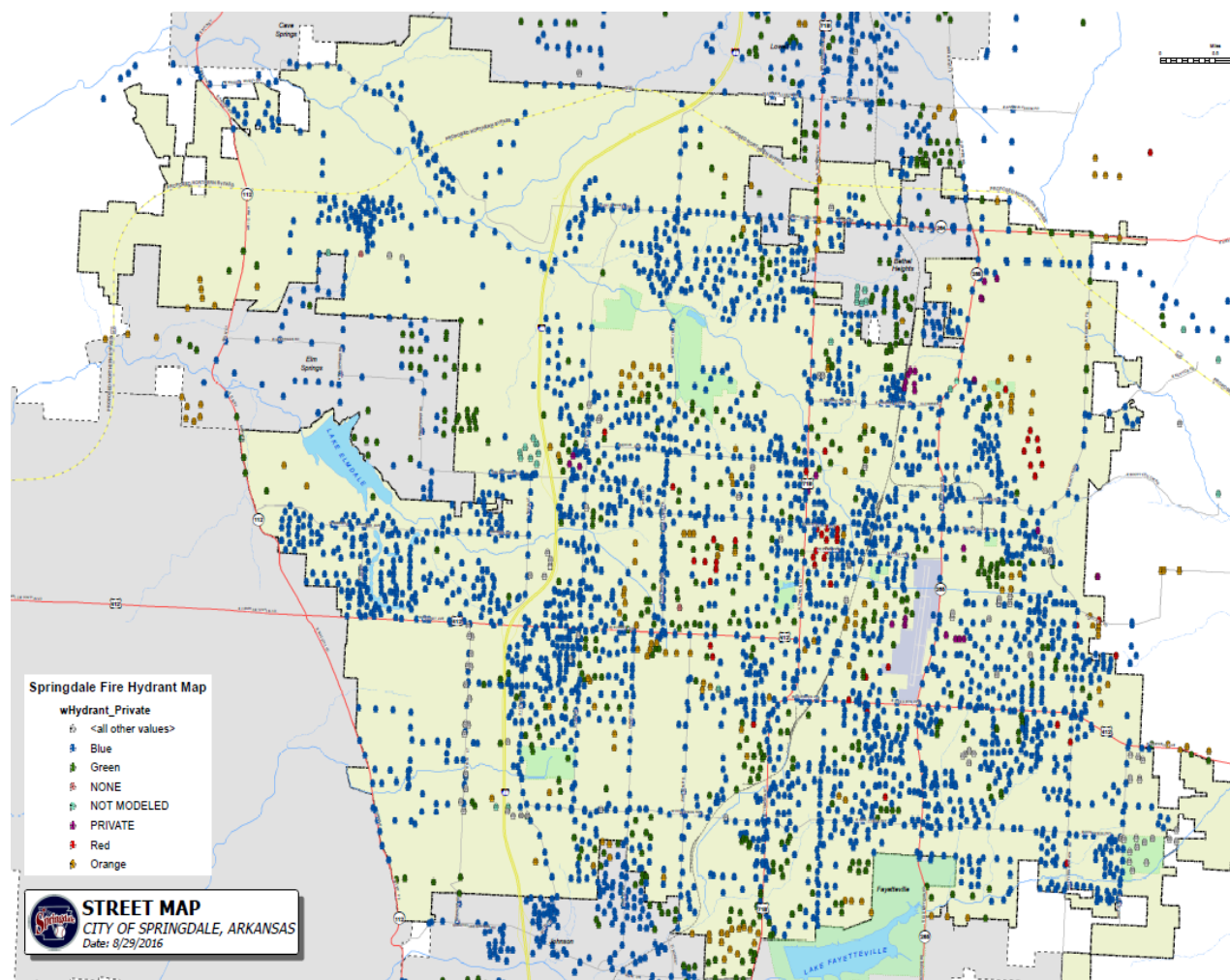


Figure 5: This map shows the location and flow capabilities of all hydrants within SFD jurisdiction. The Color-coding is consistent with NFPA 291 on the bonnets of the hydrant. The majority of all hydrants are coded blue and the Springdale Water Utilities is working to improve water supply to all areas

## About the Department

### *Legal Basis for Existence of the Department*

As required in CFAI performance indicator 1A.1, the Springdale Fire Department is a legally established fire department formed under Arkansas Statute Ark. Code Ann § 14-53-101. That statute reads: (a) The City Council shall establish fire departments and provide them with proper engines and such other equipment necessary to extinguish fires and preserve the property of the city and of the inhabitants from conflagration. (b) The council shall promulgate such rules and regulations to govern the department as it shall deem expedient. The Municipality is given the authority to guide the agency, provide for programs and services, and manage financial resources.

## History of the Department

The early history of the Springdale Fire Department was obtained from Ms. Susan Young's story in the May 2010 Shiloh Museum of Ozark History Newsletter; the April 29, 1937 edition of The Springdale News; and interviews with past and present members of the department.



Figure 6: Ol' Betsy is an American LaFrance pumper that was purchased by the city in 1931, and was restored by Springdale Firefighters.

From the late 1880's until 1909, the Town of Springdale on several different occasions tried to establish some form of fire protection, but was unsuccessful due to lack of community support. Three of those failed attempts were a bucket brigade, a hook and ladder company, and six hand-held fire extinguishers that were purchased in 1897 to serve as the town's only fire protection. All of these attempts had little success until Monday, September 6, 1909. That is when the Town Council passed a resolution allowing for the organization

and purchase of equipment for a fire department. It was then that the Springdale Volunteer Fire Department No. 1 was established. Charles L. Smyer was elected the first fire chief of a 19-member department.

Those initial members worked diligently to raise the funds, and in 1912, purchased a hand-pulled chemical wagon to handle small fires. According to a 1914 fire insurance map, the department consisted of 20 volunteers, 24 water buckets, 1 chemical engine, an 8-foot ladder, a 20-foot ladder, and 150 feet of hose. These resources served a population of approximately 1,800 people. In 1917, the City Council reluctantly purchased the department's first motorized truck, but only after the firefighters agreed to contribute \$265 that they had raised. The city established a water system in 1922 that allowed for the installation of fire hydrants around the town. That same year, the department purchased a combination hose and chemical truck.

In 1931, the department purchased a 500-Gallon American-LaFrance pumper now known as Ol' Betsy. Springdale firefighters have since fully restored that antique pumper, and it is now used in parades and other special events around the city. That same year, the department hired its first full-time employees known as "station attendants" to staff a small station located near Holcomb Street and Emma Avenue. The 1950's ushered in more services and responsibilities as the department and nationwide fire services started moving from just firefighting to a fire, rescue,



Figure 7: Springdale Firefighters at Emma Avenue and Holcomb Street, ca. 1933. Courtesy of Mary Umbaugh, Lucile Lewis, and the Shiloh Museum

and EMS service model. Department members taught first aid classes and the department began doing inspections in local schools and businesses as a method of fire prevention.

In 1961, the department held its first pancake breakfast for the citizens of Springdale, to raise money to purchase a boat for water rescue operations. That same year they installed a telephone alerting system to contact all 21 members of the department for emergencies.

In 1964, the department went to a 24 hour paid department with minimum staffing to ensure that someone was always there to answer the call. Volunteers remained a vital part of the department for many more years. In that same year, the department hired Chief Mickey Jackson as its first full-time paid fire chief. Chief Jackson began moving Springdale to the forefront in fire and EMS operations. He required independent testing boards to certify candidates for eligibility to be hired, and began a promotional testing procedure for advancement within the department.

In 1967, the department took over the EMS service from the local funeral home. The department acquired a hearse type medic unit from the funeral home, which was the beginning of Springdale's EMS service. Springdale Fire Department sent its members to the first Emergency Medical Technician class in the state. Springdale Memorial Hospital hosted the class under the direction of Virginia Clevenger, RN. Chief Jackson still holds the first EMT number issued to an individual who worked outside of the Arkansas Health Department. His EMT number is six.

In 1972, Chief Jackson also began the implementation of Springdale Fire Department's infamous "yellow fire trucks". This change made the department's emergency vehicles more visible to drivers during the day or the night.

In 1974, the department upgraded its ambulance service to an Advanced Life Support Service with the addition of EMT-Paramedics who attended one of the first Paramedic programs in the state. Those paramedics were able to operate in the more familiar modular style of medic unit known as a type 1. In 1972, Harvey Jones, a business leader and philanthropist from Springdale, purchased medic units for the department.

The department continues its forward progress in EMS today. In 1998, the department went away from paper reporting to computer based reporting software. It has progressed to one of the most innovative software platforms, ImageTrend™ that will allow for better accuracy in reporting and data collection. The medic unit locations changed from having all units at station 1, which increased response times, to having units at substations, which resulted in faster response times to the EMS coverage area. With the addition of Lifepak 12's, the department was able to capture 12 lead EKG's in the field which allowed the medical team to diagnose and treat cardiac events faster. The LifePak 12's have since been upgraded to Lifepak 15's with the capability of capturing carbon monoxide poisoning. The department has formed an EMS committee to assist making critical EMS operations decisions. The department's participation in the Arkansas Trauma System has helped provide funds for equipment as well as ensure



patients are getting the most appropriate care for their injuries. Some of the new equipment carried includes the LUCAS CPR Device that delivers proper CPR compressions throughout cardiac arrest situations, Cyanokits for exposure to toxic gases such as Hydrogen Cyanide from fires, and thermometers that can capture true core temperatures for heat and cold related emergencies. These advances and pride in service have led to Springdale Fire Department winning the 2013 and 2015 Arkansas State EMS Conference Paramedic Competition as well as currently holding the American Heart Association Mission Lifeline Gold Level Award for cardiac events.

The department has many significant emergency events throughout its history. Some of the largest emergencies in the city include the fire at Central Grease and Protein in 1976. That fire was so big it could be seen as far away as Siloam Springs, Arkansas. In 2011, a HAZMAT incident at Tyson Berry Street poultry facility resulted in the hospitalization of 170 workers. That was one of the largest mass casualty incidents in the area. In 2013, the former Ozark Guidance Center building was a total loss due to fire. The department required mutual aid from two neighboring departments, and Highway 71/Thompson Street was completely closed to traffic for hours. In 2017, a fire at Ozark Regional Transit destroyed over 15 buses, and at over \$2 million, it is the largest property loss in the department's history. Numerous fires at AERT, a local composite decking manufacturer, have resulted in fires that burn for days. These fires require tremendous work force, and can be extremely difficult to access. These events, as well as several other large and small-scale emergencies, have led to operational improvements within the department.



Figure 8: The Ozark Guidance Center Fire in 2013 (top) and the 2007 AERT silo explosion (bottom)

The first Station 1 located on Holcomb Street was constructed in 1964, and it served the department well for 35 years. In 1999, the original station was torn down and a new station built on the same site. Original Stations 2 and 3 were constructed in 1967 and were relocated to new facilities in 2015. These stations were dedicated as the department's official Rescue and HAZMAT unit stations. Station 4 was constructed in 1980. Station 5 was built in 1994, and Station 6 was constructed in 1998.

The department has made great strides in its fleet and equipment as well, starting in the 1950's when enclosed cab fire trucks were added into the fleet. Also in 1967, the department purchased Snorkel 1 an elevated master stream/bucket truck that was the first of its kind in the area. Snorkel 1 was used in fires all over Northwest Arkansas. Since then, the department's fire trucks have gone from heavy-duty utility type trucks that were converted into fire trucks to



trucks designed and engineered for firefighting only. In 1994, the department ordered its first Pierce fire trucks and in 1998, its first 75 foot Pierce ladder truck. The department stayed with Pierce until 2007 when it ordered its first Sutphen ladder truck. The addition of a dedicated ladder company brought the department into National Incident Management System (NIMS) compliance. The department ordered three more engines from Sutphen as well as another ladder truck. Starting in 2013, all fire apparatus ordered carried a Rowe Compressed Air Foam System (CAFS) onboard to assist in the extinguishment of fires more quickly. In 2015, the department ordered two more Pierce trucks to replace aging fleet from 1994.

In 1994, the department purchased a Hummer brush unit as well as a Freightliner rescue unit both of which are still in service today. To help keep the fleet going, the department hired an Emergency Vehicle Technician (EVT) certified mechanic in 2003. This specialized position allowed many repairs to be completed in-house, which reduced the vehicle's downtime.

Five-inch supply hoselines were added to units in 1977. These larger diameter hoses allowed more water to be applied to the fire more efficiently. The next year, the department switched from 1½ inch attack hoseline to 1¾ inch attack hose, again the increase in hose diameter allowed for more efficient fire extinguishment. Keeping with the trend to increase water flow to the fire, the department switched from 95 gallon per minute (gpm) nozzles to 150 gpm nozzles in 2009. In 2012, 1¾ inch hoselines were replaced with 1.88 inch hoselines, which allows for easier advancement of hoseline to get water to the seat of the fire faster.

The department has undergone changes in its HAZMAT and Technical Rescue operations throughout the years, and it recently made drastic changes. A technical rescue team was established in the early 1990's to cover all rescues. It was disbanded and department wide training for technical rescue and HAZMAT took its place to improve efficiency. In the early 1990's, the NWA Metro Chiefs formed the Northwest Arkansas Regional HAZMAT Team, and the Springdale Fire Department housed the regional HAZMAT vehicle. The regional team responded to events in Benton and Washington counties until 2013 when the team disbanded. At that time, Springdale Fire Department established its own fully equipped HAZMAT team.

There have also been many different administrative and tactical changes throughout the years. Units have moved from one person responding with an engine to a fire to three-person minimum staffing of all fire apparatus. In addition, all members now follow the Occupational Safety and Health Administration (OSHA) 2 in/2 out rule of entry. The department began operating under the NIMS after 9/11 to help aid in streamlining operations and ensuring firefighter safety. In 1987, shift commanders were taken off firefighting units and given their own vehicle to command the fire scene. In 1989, dispatch operations moved from Station 1 to a central location at the Springdale Police Department. To this day, both the fire and police departments still share the dispatch center. In 2010, Springdale began participating in the Emergency Medical Dispatch (EMD) certification program. This program prioritizes calls by severity and helps to determine the appropriate mode of response. The department also created a logistics captain position in 2013 that is responsible for the procurement of needed resources for personnel and equipment during both slow times and times of emergency. In

addition, he handles all station repairs and remodels and ensures an adequate uniform supply is available.

Prevention has always been one of the best ways to improve public safety, and the department's Community Risk Reduction Division (CRRD) has done just that. In 1989, a captain was assigned to the position of fire marshal to carry out inspections and coordinate fire prevention presentations. The department's CRRD division now has three personnel: a battalion chief fire marshal, a captain assistant fire marshal, and a captain public education specialist. What began as a Fire Prevention Week has evolved into Fire Prevention Month with a fire safety trailer, video presentations, and handouts in 18 elementary schools and several pre-K facilities within Springdale. This early education is an important part of the reduction in the number of fires in the city. The Washington County Youth Fire Intervention Taskforce program was established to teach children who have been involved in fire related incidents the dangers of fire in hopes that it will prevent them from playing with fire in the future. The department also provides free smoke detectors, free 9V batteries, and free installation of both. The department collaborates with the Red Cross for neighborhood "blitzes" where personnel go door to door once a year and install smoke detectors and/or batteries for those that needed them.

The department has made great strides to improve the training of its members in all different areas. It established a training division with a battalion chief training officer and a captain assistant training officer. The Northwest Arkansas Training Officers Association has developed a regional training academy that allows firefighters to become International Fire Service Accreditation Congress (IFSAC) certified in Firefighter I & II. Before the regional academy was established, recruits would have to travel nearly five hours to the Arkansas Fire Training Academy on the Southern Arkansas University Tech campus in Camden, Arkansas. Task books, that ensure proficiency standards are met, are assigned to firefighters wishing to promote to another position such as driver operator, captain, or battalion chief. Employees are not allowed to test for a promotion until that task book has been completed and signed off by their commander. The department also established minimum training requirements for promotion to ensure that employees received the required training before assuming a position. Most recently, the Training Division has been developing and implementing proficiency standards testing for both fire and EMS. Proficiency standards testing ensure that all employees have a working knowledge of basic job functions, and it promotes improvement of those functions. The department has also changed the way it holds classroom training by installing cameras in the classroom and using Go To Meeting™ to conference all stations in at the same time. This allows the units to participate in the training while staying in their area to better serve the citizens. Another tactical training aid is the Flame-Sim™ software that allows crews to experience real world fire events on a computer. This program also allows several crews to train on remote computers as a whole battalion with each crew being responsible for certain tasks.

Springdale Fire Department has invested many hours into the health and safety of its firefighters to help ensure that everyone goes home to their families. The department

implemented a physical fitness committee that is responsible for conducting annual wellness and fitness assessments. The department also established a policy that mandated a minimum of 30 minutes of physical training for all members while on duty. In 2013, all members began receiving annual physicals to help prevent early firefighter deaths. To aid in fire ground safety, the department purchased air purifying respirators (APR's) in 2014 for all of its members and has specific requirements must be met before members may doff their air-packs or take the APR's off. The department also began focusing on rapid intervention team (RIT) training and equipment in 2010. A RIT team is used to locate lost or downed firefighters and safely remove them from the dangerous situation.

The department has also reached out to the community to help aid its citizens in need. The department established a Citizens Fire Academy in 2002 to teach participants what being a firefighter is like. In 2013, a Community Emergency Response Team (CERT) was created to certify participants in basic first aid and provide them with basic skills needed to assist in an emergency until professional services arrive.

In 2009, the department created its Honor Guard to honor one of its own members who was killed in Iraq. Since then, it has participated in many ceremonial events such as funerals, parades, and banquets. Members of the department have participated in an annual toy drive for needy children at Christmas, and it has grown into an annual event where over 250 toys are distributed to children at EOA Children's House. The kids have their picture taken with Firefighter Santa and they get to meet Sparky the Fire Dog. Since 2008, the department has sent members to be counselors at Camp Sunshine, a four-day camp for Arkansas children who have suffered burn injuries.

In 2018, the department received an ISO class rating of 1 out of 10. That is one of the highest ratings in Arkansas and is desired by insurance companies and commercial businesses when they are looking for locations to operate. The department celebrated its 100<sup>th</sup> anniversary in 2009 and is looking forward to the opportunity to continue serving the citizens of Springdale and making great improvements in its next 100 years.

## ***The Past Ten Years***

### **2008**

- Hired and trained 5 firefighters to replace 5 existing positions
- ISO Rating of 2 earned
- 1<sup>st</sup> Sutphen fire engine Purchased for frontline Engine 4

**2009**

- Hired and trained 4 firefighters to replace 5 existing positions
- The department celebrated its 100<sup>th</sup> anniversary
- SFD Honor Guard Formed
- Purchased two 4x4 Braun medic units
- Fire nozzles switched from 95 gallons per minute to 150 gallons per minute

**2010**

- Hired and trained 1 firefighter to replace 1 existing position
- Emergency Medical Dispatch implemented in dispatch center

**2011**

- Hired and trained 8 firefighters to replace 10 positions
- Sutphen fire engine purchased for frontline
- Officer development handbooks implemented

**2012**

- Hired and trained 5 firefighters to replace 5 positions
- Northwest Arkansas Regional HAZMAT Team dissolved, Springdale HAZMAT Team formed
- HAZMAT truck purchased
- Purchased two 4x4 Braun medic units
- All fire apparatus equipped with 1.88 inch diameter hose instead of 1¾ inch hose

**2013**

- Hired and trained 8 firefighters to replace 8 positions
- Cyanokits for smoke inhalation added to all medic units
- Annual Physicals for all members implemented
- Logistics Officer Position created
- Sutphen fire engine with CAFS purchased for frontline
- Sutphen aerial purchased for frontline and old aerial placed into back-up fleet
- Lifepak 15's purchased for entire medic unit fleet
- The department's Strategic Plan Adopted

**2014**

- Hired and trained 15 firefighters to replace 9 positions
- Air purifying respirators purchased and added to post incident safety equipment
- Fire Smoke Coalition Class hosted by SFD
- Two Peirce fire engines w/CAFS Systems purchased for frontline
- Switched to ImageTrend™ reporting software for EMS reports, also utilized Toughbooks for mobile report writing

**2014- Continued**

- Emergency Responder class taught by SFD personnel at Springdale High School
- Trail unit purchased for Razorback Greenway Trail responses

**2015**

- Hired and trained 8 firefighters to replace 6 positions
- Purchased a 4x4 Braun medic unit
- Switched to ImageTrend™ reporting software for NFIRS reports, inspections, inventory, and training records
- Stations 2 & 3 relocated using bond funds
- Mission Lifeline award from American Heart Association
- Accreditation Manager position created

**2016**

- Added 3 new positions and hired and trained 9 firefighters to replace 4 positions
- Radio system converted from an analog to a digital system
- New SCBA's purchased for entire department
- New thermal imagers purchased for entire fire fleet
- Reduced EMS response area to within Springdale city limits only
- 2 new Peirce engines placed in service for Stations 1 and 2

**2017**

- Achieved ISO Rating of 1
- Purchased 2 new staff vehicles
- American Heart Association Mission Lifeline Gold Award

**2018**

- Hired and trained 6 firefighters to replace 6 positions

***Services Provided***

The department provides a wide range of services to the citizens of Springdale including fire, EMS, rescue, and HAZMAT. The services provided have been chosen based on the department's call history as well as current and future needs of the citizens and the city. This section will provide a brief overview of all of those services.

The department's primary response services are fire suppression and advanced life support (ALS) emergency medical service (EMS). These two services make up over 90% of the department's call volume with EMS making up over 75% of the total call volume. The department also provides other services such as its own fully equipped level two hazardous materials (HAZMAT) response team; technical rescue services such as high and low angle



rescue, swift water rescue, trench rescue, confined space entry, elevator rescue, and auto extrication. The department provides mutual and/or automatic aid to all of the surrounding cities and towns, as well as parts of rural Washington, Benton, and Madison Counties.

The department provides a variety of non-emergency response related services in addition to the emergency response services mentioned above. The Community Risk Reduction Division (CRRD) reviews new construction building plans to ensure they meet current fire codes. They also provide inspection services for new commercial occupancies as well as annual inspections for existing commercial occupancies. Through these inspections, the department is kept up to date on the fire hazards located in commercial buildings and can try to prevent emergencies before they happen. The CRRD provides fire extinguisher and CPR training for civic groups, as well as a medical emergencies training class currently being held at Springdale High School. This class will be expanding to Har-Ber High School in the near future. The department worked with local instructors to form a Citizen Emergency Response Team (CERT). This division is also responsible for fire safety month programs in the elementary schools as well as utilizing the E.D.I.T.H. trailer at public events.



Figure 9: Captain David Kissinger teaches CPR to Students during the Emergency Responder Class at Springdale High School.

The SFD Training Division provides required training for EMS, fire, HAZMAT, and technical rescue on an as needed basis to SFD personnel and members of surrounding departments. They are also responsible for maintaining personnel training records and ensuring that the personnel are meeting required annual training standards. The Training Division is responsible for the upkeep and administration of task books associated with specific job levels.

The Springdale Fire Department Public Safety Answering Point (PSAP) and dispatch services are provided by a central police and fire communications center that is under the supervision of the Springdale Police Department (SPD). The facility is a secure location within the SPD. The communications center receives 9-1-1 calls directly as well as calls that are transferred from communication centers in surrounding areas. The communication center is responsible for all police, fire, and EMS calls within the city limits. The department provides a training academy to all new dispatchers and annually recertifies them in CPR.

### ***Fire Suppression***

The department responded to 833 fire suppression calls from 2015 to 2017. This was 2.95% of the department's total call volume. Of those calls, 211 were structure fires with moderate risk or higher. Initial dispatch is now a standard alarm consisting of three engines (one for RIT), one ladder truck, one medic unit, and one battalion chief. The incident commander has the ability



to upgrade the alarm to a second alarm with two additional fire response units (engine or ladder), and the number of medic units the commander sees fit. Fire suppression units are equipped with a minimum of 1,050 feet of 5 inch supply line. Engines exceed ISO recommendations and carry 1.88 inch attack line and 2½ inch & 3 inch hoses. They also have basic compliment tools for forcible entry and basic firefighting, a hand-held thermal imaging camera (TIC), seven self-contained breathing apparatus (SCBA) and spare air cylinders, radios for all positions, an air-monitoring meter, basic hand tools, and an EMS kit. Ladder Companies carry a more extensive collection of tools for ventilation, forcible entry, and extrication, as well as a wide array of ground ladders. Ladder Companies operate either a 100-foot platform ladder or one of two 75-foot ladders. Medic Units are on scene as initial fire attack and as medical standby, if needed. Battalion 1 is equipped with spare radios, a command board, a computer with database access, specialized air monitoring equipment, and a video dash camera. The brush unit is a military spec HUMMER. It has a smaller gpm pump with a spray bar that can be operated from inside the cab, wildland hose, and a small compliment of fireline tools. The brush unit is cross-staffed with personnel from Engine 1. All firefighters are certified with a minimum of Firefighter I & II, EMT- Basic, and HAZMAT Operations.

Service	Available Resources	Staffing per shift
<b>Structural Fire Suppression</b>	5 engines staffed with three to four personnel	<b>56 Hour Staffing</b> 90 to 111 total personnel 30 to 36 personnel per shift 3- Battalion Chiefs 21- Captains 15- Engine Driver/Operators 6- Aerial Driver/Operators 54 to 63- Firefighters and Firefighter/Paramedics <b>40 Hour Staffing</b> 10 Administration/Support Positions
	2 ladder trucks staffed with three to four personnel	
	4 ALS medic units staffed with two personnel	
	1 Battalion Chief unit staffed with one person	
	Reserve Engines and Ladders, if they are in service	
<b>Grass/Brush Fire Suppression</b>	<p>All fire units carry 200 feet of 1" wildland hoseline and are the initial attack on brush fires unless Brush 1 is dispatched at the request of the first due unit.</p> <p>Brush 1 is a Type VI HUMVEE. It carries 1" hoseline as well as 1 3/4" and 2 1/2". It also has an assortment of fireline tools and portable extinguishers. The department is looking at ordering two new units in 2018.</p> <p>Surrounding departments also have a variety of brush units available for mutual aid assistance. In addition, Arkansas Forestry Department in Fayetteville can provide assistance if needed.</p>	<p>Fire Units are manned by a minimum of three personnel.</p> <p>Brush 1 is manned by one person assigned to the ladder company at Station 1.</p> <p>The department requires all members to obtain 8-hour wildland firefighting certification, and there are approximately 20 members with 40 hours red card certification.</p>

<b>Aircraft Fire Suppression</b>	<p>The department does not have a dedicated engine or ARFF unit assigned to Springdale Municipal Airport. However, all fire suppression units are equipped with F-500 encapsulating foam.</p> <p>The department currently does not have any personnel certified in ARFF operations.</p>	<p>A standard alarm assignment: 3 engines, 1 ladder truck, 1 medic unit, and 1 battalion chief are dispatched to confirmed or eminent crashes.</p> <p>A still alarm: 1 engine, 1 medic unit and 1 battalion chief are dispatched to potential incidents.</p>
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Table 3: This table shows the available staffing and resources for fire related incidents

## EMS Operations

The department responded to 19,201 EMS calls from 2015 to 2017. This was 68% of the department's total call volume. Standard response for an EMS call is one engine and one medic unit unless the call is outside the city, a lift assist, or a specific request for a single medic unit. Four Engines and two Ladder units are equipped with a minimum of three personnel who are capable of administering basic life support including AED's with monitoring capabilities. Four frontline medic units are located at stations 2, 3, 4, & 5, and they exceed state minimums of required equipment. In addition, the medic units are capable of providing advanced life support (ALS) service and transport. Trail 1 is equipped with the same EMS equipment that the engine and ladder companies have. This unit also has the capacity to hold a stokes basket that can assist with victim transport out of remote areas. The department currently has 44 paramedics and 78 EMT-B in both line and administrative positions. The department is currently working with Springdale Police Department, and has four personnel trained as SWAT paramedics. The department also has three personnel certified as Disaster Medical Specialists. The department conducts annual EMS refresher training for its personnel, as well as monthly-required EMS training. All this training ensures the best service for the citizens of Springdale.

Service	Available Resources	Staffing per shift
<b>Emergency Medical Services</b>	4 ALS medic units staffed with two personnel	<b>56 Hour Staffing</b> 90 to 111 total personnel 30 to 36 personnel per shift 3- Battalion Chiefs 21- Captains 15- Engine Driver/Operators 6- Aerial Driver/Operators 54 to 63-Firefighters and Firefighter/Paramedics
	5 BLS engines staffed with three to four personnel	
	2 BLS ladder trucks staffed with three to four personnel	
	1 Battalion Chief unit staffed with one person with BLS capabilities	
	1 ALS capable trail unit staffed as needed	
	2 BLS capable bike medic units staffed as needed	<b>40 Hour Staffing</b> 10 Administration/Support Positions

Table 4: This table shows the available resources and staffing for EMS related incidents.

## HAZMAT

The department responded to 257 HAZMAT incidents between 2015 and 2017. Over 160 of those calls were natural gas leaks usually outside at a meter. Carbon monoxide and gasoline leaks are the next two types of HAZMAT calls when ranked by frequency. The HAZMAT unit is housed and operated by Station 3 personnel. The majority of the department's HAZMAT equipment is carried on HAZMAT 3. All engine and ladder companies carry a small HAZMAT kit with booms, pads, and Plug'N'Dyke™. HAZMAT 3 carries a variety of equipment including HAZMAT ID™, Area-Rae™, Multi-Rae™, larger quantities of booms and pads, fluid transfer capabilities, HAZMAT suits (level A, B, & C), and decontamination equipment. The equipment carried on HAZMAT 3 makes the department's HAZMAT unit a level 2 FEMA team. All department personnel are certified to a minimum of HAZMAT Operations level, and the department currently has 46 HAZMAT Technicians.

Service	Available Resources	Staffing per shift
HAZMAT	Station 3 houses HAZMAT 3 and Engine 3 that are dispatched to HAZMAT calls. HAZMAT 3 is cross-staffed with personnel from Engine 3 as needed.	Engine 3 and HAZMAT 3 are manned by a minimum of 2 HAZMAT Technician every shift.  Personnel assigned to E3 are also certified in HAZMAT Chemistry and HAZMAT Site Operating Practices. The department also has all line personnel trained to a minimum of HAZMAT operations, and currently has 46 personnel certified to the level of HAZMAT Technician who can respond to incidents. All personnel are required to undergo HAZMAT training every two months, and twice a year the department participates in a regional HAZMAT training drill.
	HAZMAT 3 is capable of handling most Chemical, Biological, Radiological and Nuclear (CBRN) events. Mutual aid from surrounding departments is also available if needed.	
	A-Shift-11 HAZMAT Technicians	
	B-Shift-14 HAZMAT Technicians	
	C-Shift-11 HAZMAT Technicians	
	Administration-10 HAZMAT Technicians	
	72 Operations level personnel	

Table 5: This table shows the available resources and staffing for HAZMAT related incidents.

## Rescue

The department responded to 1980 technical rescue calls between 2015 and 2017. Motor vehicle accidents and extrications accounted nearly all of those calls. The department is equipped to handle a wide variety of technical rescues including motor vehicle extrication, rope high and low angle rescue, swift water, confined space, elevator, and a small amount of trench and structural collapse rescue. Ladders 1 & 6 are equipped with the newest compliment of extrication tools used for MVA's including spreaders, two cutters, two hydraulic rams, and Rescue 42™ struts. Engines 4 and 5 also have combi-tools capable of starting operations on most extrication incidents. Station 2 is the designated technical rescue station. It houses Rescue 2, which carries an assortment of rescue equipment for extrication, confined space, high angle, and man versus machine rescue. Personnel assigned to either a ladder company, or Engine 2 must possess a minimum technician level in three disciplines. The department

encourages all members to obtain technician level status in the various technical rescues due to the amount of labor necessary on large-scale incidents. The SFD is able to obtain mutual aid from surrounding departments if internal resources are not available or if a large-scale incident were to occur.

Service	Available Resources	Staffing per shift
<b>Motor Vehicle/Accidents and Extrication</b>	2 ladder companies equipped with Amkus extrication equipment compliment.	The department currently has 59 personnel certified as Vehicle Extrication Technicians. All personnel undergo basic extrication training during their first year of employment. Members assigned to a ladder truck or Station 2 must also have two other technical rescue technician certificates based on the unit they are assigned. Members of the department are required to participate in annual refresher training.
	Rescue 2 and Engine 2 equipped with Hurst extrication tools.	A-Shift- 22 Vehicle Extrication Technicians
	Engines 4 and 5 equipped with Hurst Combi-tool and portable power unit.	B-Shift- 20 Vehicle Extrication Technicians
	Reserve Ladder 21 contains Hurst compliment of tools.	C-Shift- 14 Vehicle Extrication Technicians
	Rescue 2 and Ladders 1 and 6 also have cribbing and air bags available for use.	Administration- 3 Vehicle Extrication Technicians
<b>Swiftwater Rescue</b>	The department's swiftwater rescue equipment currently consists of helmets; wet and dry suits for technicians; and rope kits. All units are equipped with lifejackets and rope throw bags. The department has no boats or means of ice rescue.	The department currently has 53 personnel certified as swiftwater technician. Engine 2 and the closest available Ladder truck are dispatched to all Technical Rescues with at least three personnel in addition to the closest available Engine company.
	All swiftwater equipment is stored at Station 1. It is dispersed to technicians on each shift prior to inclement weather events.	A-Shift-13 Swiftwater Rescue Technicians
		B-Shift-16 Swiftwater Rescue Technicians
		C-Shift-15 Swiftwater Rescue Technicians
		Administration- 9 Swiftwater Rescue Technicians

(Table continued on the next page)

<b>Confined Space Rescue</b>	Rescue 2 currently houses all confined space rescue equipment including tethers, fans, communications systems, supplied air systems, and tripod removal systems.	Engine 2 is staffed with a minimum of two personnel who are certified confined space rescue technicians. The department currently has 57 confined space rescue technicians.
		A-Shift- 13 Confined Space Rescue Technicians
		B-Shift- 19 Confined Space Rescue Technicians
		C-Shift- 15 Confined Space Rescue Technicians
		Administration- 10 Confined Space Rescue Technicians
<b>High Angle/Rope Rescue</b>	Ladder 1, Ladder 6, Engine 2 and Rescue 2 currently house all rope rescue equipment. That equipment includes harnesses; a minimum of two 500 foot rope bags; and rope kits that include carabiners, ascenders and decenders, and several other essential tools.	For personnel to be assigned to Engine 2 or a ladder company, they must be certified as rope rescue technicians. All personnel are required to be trained to operate as a junior member on a rope rescue team. Personnel go through a 40-hour core to obtain basic skills before going to rope rescue technician class.
		A-Shift-15 Rope Rescue Technicians
		B-Shift-16 Rope Rescue Technicians
		C-Shift-16 Rope Rescue Technicians
		Administration-10 Rope Rescue Technicians

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<b>Trench Rescue and Structural Collapse Rescue.</b>	<p>The department currently has minimal resources to respond to a trench or structural collapse rescue. It currently has 4 trench panels and would have to contact local retailers to get a lumber package for either incident.</p> <p>Mutual aid from Rogers Fire Department and Washington County DEM are most likely courses of action as both agencies have full compliments of equipment.</p>	To be assigned to E2 there is not a requirement for either discipline. The department conducts annual refresher training and encourages line personnel to attend these classes. If for some reason no technicians are available for either discipline, they can be off duty personnel can be recalled through Everbridge™ or CrewSense™.
		A-Shift- 14 Trench Rescue Technicians and 5 Structural Collapse Technicians & 7 Operations Level
		B-Shift- 19 Trench Rescue Technicians and 1 Structural Collapse Technician and 9 Operations Level Certified
		C-Shift- 16 Trench Rescue Technicians and 2 Structural Collapse Technicians & 4 Operations Level Certified
		Administration- 10 Trench Rescue Technicians and 1 Structural Collapse Technician & 5 Operations Level Certified

Table 6: This table shows the resources and staffing available for a rescue related incident.

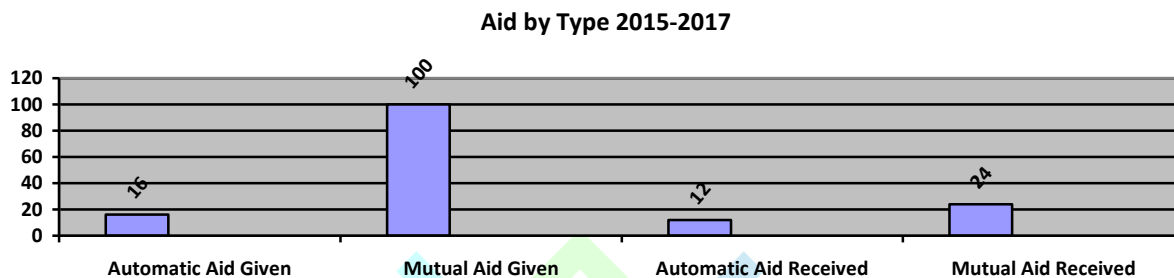
### ***Automatic/Mutual Aid***

The Springdale Fire Department provides aid to other area departments through either automatic or mutual aid agreements. Automatic aid agreements are defined as agreements that provide assistance that is dispatched automatically by a contractual agreement between two fire departments, communities, or fire districts. Mutual aid is defined as assistance that is dispatched, upon request, by the responding fire department. Mutual aid is usually requested upon arrival at the scene. Mutual aid is defined between departments by a signed contractual agreement.



Figure 10: SFD personnel and personnel from neighboring departments participate in a regional HAZMAT drill

The Springdale Fire Department has automatic aid agreements with Fayetteville Fire Department and Lowell Fire Department. The units dispatched are based on the location of the incident in proximity to the city. The Springdale Fire Department has mutual aid agreements with Central EMS, Cave Springs Fire Department, Hickory Creek Fire Department, Johnson Fire Department, Madison County EMS, Nob Hill Fire Department, Rogers Fire Department, Siloam Springs Fire Department, and Tontitown Area Fire Department.



*Table 7: This table shows mutual aid by incident type from 2013-2015. The high amounts of rescue/EMS incidents is incorrect as the majority of the incidents were coded as mutual aid but were actually in the old ambulance jurisdiction.*

## Resources

Line positions work 56 hours a week with a 24 hour on and 48 hour off schedule, while administrative positions work 40 hours on an 8am-5pm Monday through Friday schedule.

## Stations, Apparatus, and Staffing

The Springdale Fire Department is comprised of 125 personnel and six stations located throughout the city. Each station is staffed using up to 37 line personnel from each of our three shifts: A, B, & C for 111 line personnel. Minimum staffing requirements require 30 personnel to staff the above apparatus. Of that, there must be at least: 1 Battalion Chief or acting Battalion Chief, 7 Captains of which only four may be in an acting Captain capacity, four Paramedics, seven Driver/Operators or acting Driver/Operators of which two must be Aerial Driver/Operator certified, and 11 Firefighter/EMT or Firefighter/Paramedic positions. If for some reason staffing falls below the 30, overtime, either through callback staffing or through mandatory holdover, is authorized. All line personnel that respond on apparatus work a 24-hour shift with 48 hours off between shifts. The department will staff additional personnel as needed for major events such as severe weather, natural disaster, or any other high-risk scenarios that require personnel. Guidelines for unit staffing are defined in Springdale Fire Department Policies and Procedures 101.05. (Springdale Fire Department, 2015)

14 administrative personnel work Monday through Friday 8am to 5pm. Ten administrative personnel ranked either captain or higher and respond when needed to incidents as support staff. Four administrative civilian positions include an administrative assistant, an EMS billing clerk, an office receptionist, and the department mechanic.

# SPRINGDALE FIRE DEPARTMENT

## 2017 ORGANIZATIONAL CHART

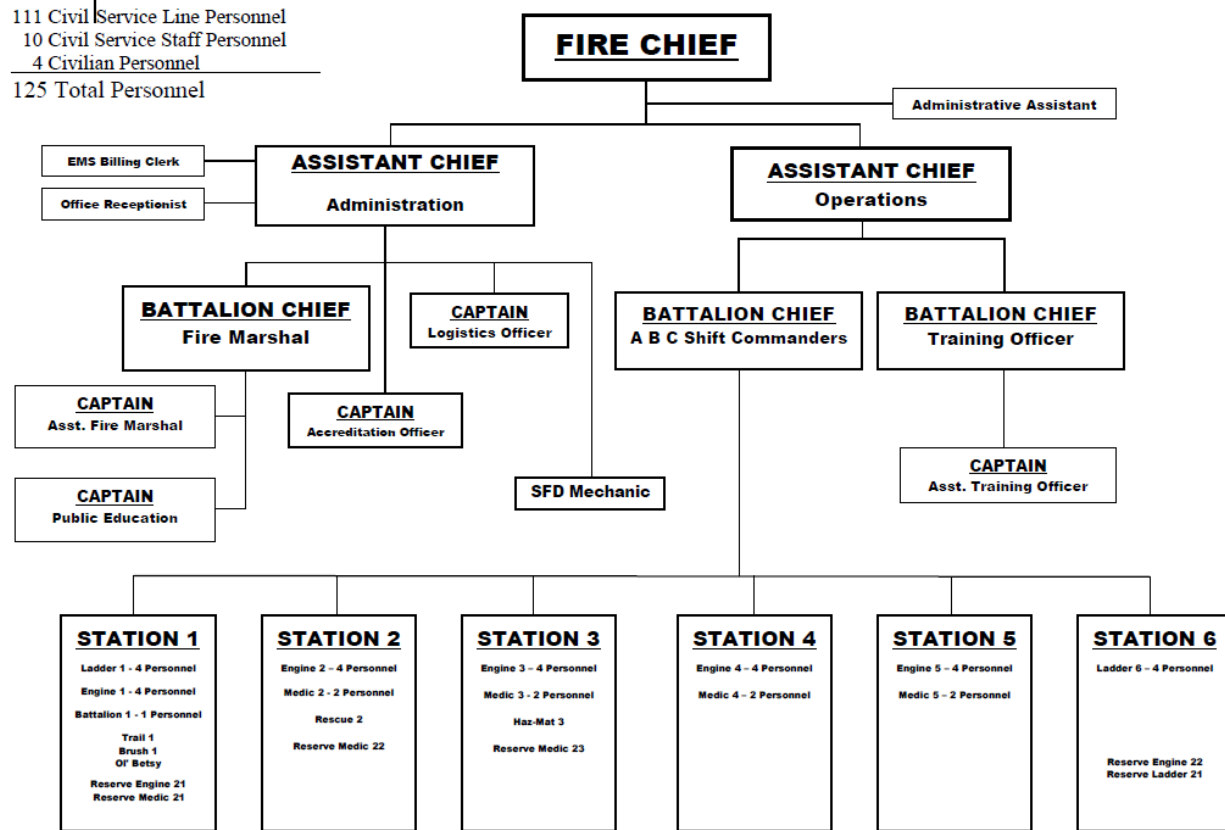


Figure 11: Springdale Fire Department Organizational Chart

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Response Capabilities by Station					
	<u>Engine Staffing</u>	<u>Ladders Staffing</u>	<u>Medic Staffing</u>	<u>Specialty Units Staffing</u>	<u>Command Unit Staffing</u>
<b>1</b>	1 3-4	1 3-4	0	Brush 1* Trail 1*	1 1
<b>2</b>	1 3-4	0	1 2	Rescue 2*	
<b>3</b>	1 3-4	0	1 2	Hazmat 3*	
<b>4</b>	1 3	0	1 2		
<b>5</b>	1 3-4	0	1 2		
<b>6</b>	0	1 3-4	0		
<b>Total</b>	5 15-19	2 6-8	4 8	0	1 1

Table 8: This table shows the department's response capabilities by Station

\*denotes units that are staffed as needed with personnel from other units

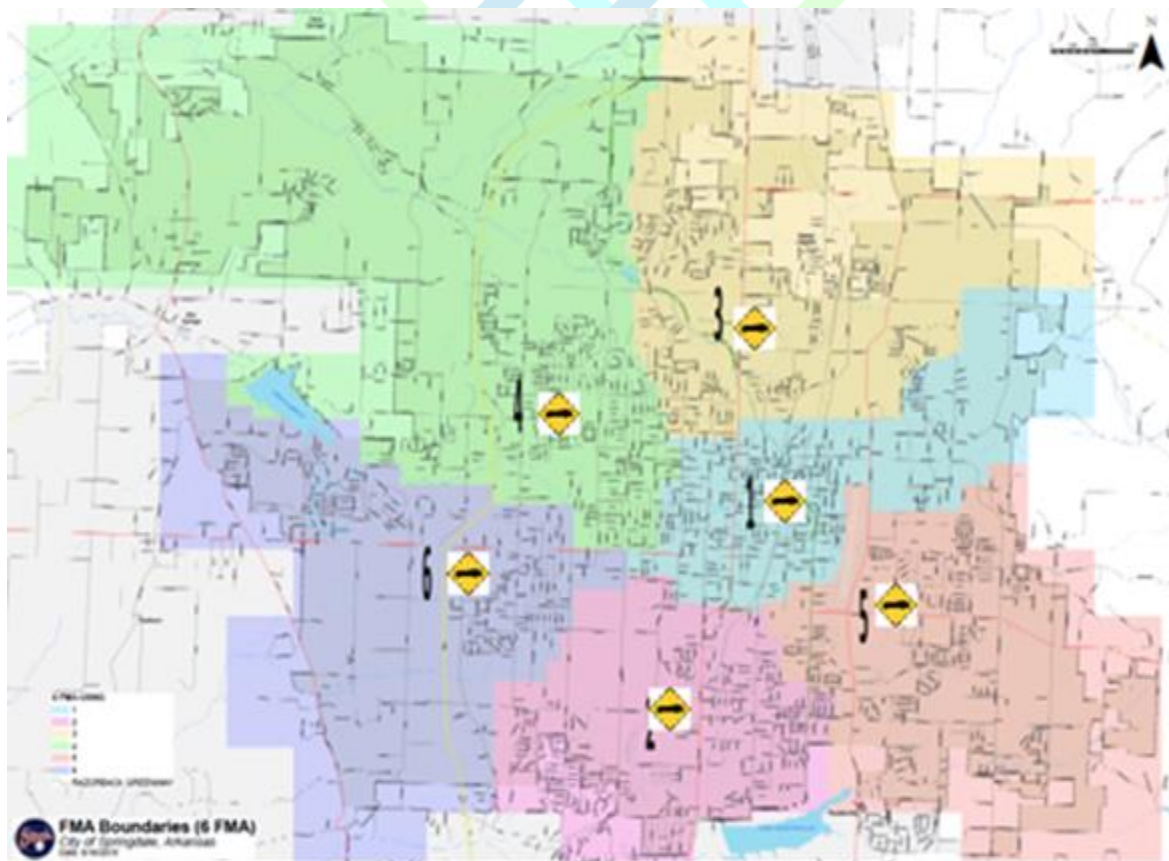


Figure 12: Map Fire Station Locations and FMA's



## *Station 1*



Station 1 is located at 417 Holcomb Street, and was constructed in 2000. It is located two blocks south of downtown Springdale. It is in the middle of the most densely populated part of Springdale. Station 1 is also referred to as "Central Station". Operations units housed at this facility include Battalion 1, Engine 1, Ladder 1, Brush 1, Trail 1, and Engine 21. Battalion 1 is a 2017 Chevrolet Suburban. It responds as the "command post" to all major events throughout the city. Engine 1 is a 2015 Pierce Saber. It has a 1,260 gallons-per-minute (gpm) pump with a Rowe compressed air foam system (CAFS) and holds 500 gallons of water and 30 gallons of foam. Ladder 1 is a 2007 Sutphen SPH100 100 foot platform aerial with a 2,000-gpm pump and holds 250 gallons of water. Brush 1 is a 1995 Hummer equipped with a skid unit pump. It is capable of maneuvering off-road and carries a variety of wildland tools and hose. Trail 1 is a 2014 Moto Electric unit. It is equipped with a stokes basket stretcher and EMS equipment used for removing people off of the Razorback Greenway Trail System and other areas that cannot be easily accessed with full size apparatus. Engine 21 is a 1999 Pierce Saber reserve unit. Cars 1 through 9 are a variety of light duty vehicles that are capable of filling support roles.



The administrative offices are located on the second floor of this station. The department's ten Civil Service administrative staffing positions are as follows:

1. One Fire Chief
2. One Assistant Chief
3. One Operations Division Chief
4. Training Division- One Battalion Chief and One Captain
5. Community Risk Reduction Division- One Battalion Chief and two Captains
6. Logistics Officer- One Captain
7. Accreditation Manager- One Captain

Unit Name	Staffing	Miscellaneous
Battalion 1	1	
Engine 1	3-4*	*Staffing dependent on Minimum Staffing
Ladder 1	3-4*	*Staffing dependent on Minimum Staffing
Brush 1	1*	*Cross staffed with personnel from Ladder 1
Trail 1	1*	*Cross staffed with personnel from Ladder 1
Engine 21	0	Reserve Units
Cars 1-9 & 16	10	Administrative Positions (8-5 M-F)

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## Station 2



Station 2 is located at 1660 W. Don Tyson Parkway, and was constructed in 2015. It is the sister station to Station 3. It is located on Don Tyson Parkway just west of Thompson Street. This location allows for quick access to I-49, Hwy 71, and other areas of the city. Station 2 has been designated as the department's "technical rescue" station. Station 2 personnel are required to have a minimum of three "technician level" technical rescue training certificates from one of the following categories: swift water, confined space, structural collapse, trench rescue, or motor vehicle extrication. This station also has the department's SCBA repair facility with certified Scott™ safety repair technicians and repair equipment. Operations units housed at this station include Rescue 2, Engine 2, Medic 2 and Medic 22. Rescue 2 is a 1994 Freightliner FL70 that has been converted into a rescue response vehicle. It contains most of the department's specialty rescue equipment. Engine 2 is a 2015 Peirce Saber with a 1,260-gpm pump and a Rowe (CAFS) system. It holds 500 gallons of water and 30 gallons of foam. Engine 2 is one of the newest engines in the department. Medic 2 is a 2010 Braun Raider on a 4500 Dodge chassis. Medic 22 is a 2008 Braun Raider on a Dodge 4500 chassis that serves as a reserve unit.

Unit Name	Manpower	Miscellaneous
Engine 2	3-4*	*Staffing dependent on Minimum Staffing
Medic 2	2	
Rescue 2	1*	*Cross-staffed with personnel from Engine 2
Medic 22	0	Reserve Unit

### Station 3



Station 3 is located at 730 Glass Drive, and was constructed in 2015. It is the sister station to Station 2. It is located on N. Thompson Street just south of Wagon Wheel Road. This location allows for quick access to Hwy 71 as well as other main thoroughfares on the north side the city. Station 3 has been designated as the department's "HAZMAT" (hazardous materials) station. Station 3 personnel are required to have additional HAZMAT training including: HAZMAT Technician, HAZMAT chemistry, and Site Ops. This station has a dedicated room for servicing specialized HAZMAT equipment including a fume hood for calibrating gas meters. Operations units housed at this station include HAZMAT 3, Engine 3, Medic 3, and Medic 21. HAZMAT 3 is a 2002 International 4300 SBA that has been converted into a HAZMAT command post/response vehicle to handle the needs of most HAZMAT incidents within our city. It carries various levels of chemical protective clothing, computers, air-monitoring equipment, and several supplies to capture and contain different types of leaks and spills. Engine 3 is a 2014 Sutphen Monarch with a 1,500-gpm pump and a Rowe (CAFS) system. It holds 750 gallons of water and 30 gallons of foam. Medic 3 is a 2016 Braun Liberty on a Ford F450 chassis. Medic 21 is a 2008 Braun Raider on a Dodge 4500 chassis that serves as a reserve unit.

Unit Name	Manpower	Miscellaneous
Engine 3	3-4*	*Staffing dependent on Minimum Staffing
Medic 3	2	
HAZMAT 3	1*	*Cross staffed with personnel from Engine 3
Medic 21	0	Reserve Unit

## Station 4



Station 4 is located at 3420 Elm Springs Road, and was constructed in 1982. It is currently the department's oldest working fire station. It is located on a dangerous curve at Elm Springs Road and White Road. This station was originally on a two-lane road that has since been widened to five lanes. The road widening has shortened the front ramp to the station, and can delay entering into traffic due to the dangerous curve and high traffic speeds. Station 4 is not a pull through station. This means that units have to back into their bays that increase the probability of damaging apparatus and the building. This location allows for quick access to I-49 and Huntsville Avenue, a major east-west thoroughfare. This station is responsible for the area designated as "4 west" which has some of the longest response times in the city due to its more remote location. Operations units housed at this station include Engine 4 and Medic 4. Engine 4 is a 2009 Sutphen Monarch it has a 1,500 gpm pump. It holds 750 gallons of water and 30 gallons of foam, and it is equipped with basic auto extrication tools. Medic 4 is a 2013 Braun Liberty on a 4500 Dodge chassis.

Unit Name	Manpower	Miscellaneous
Engine 4	3	
Medic 4	2	



***Station 5***

Station 5 is located at 1776 E. Robinson Avenue, and was constructed in 1994. It is located on Hwy 412 East just east of Hwy 265. There is a stop light in front of the station that controls the traffic on Hwy 412 during emergency calls. Station 5 is located in a densely populated and one of the fastest growing areas of the city. Operations units housed at this station include Engine 5 and Medic 5. Engine 5 is a 2011 Sutphen Monarch it has a 1,500-gpm pump and holds 750 gallons of water. Medic 5 is a 2013 Braun Liberty on a 4500 Dodge chassis.

Unit Name	Manpower	Miscellaneous
Engine 5	3-4*	*Staffing dependent on Minimum Staffing
Medic 5	2	

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**Station 6**

Station 6 is located at 1623 48<sup>th</sup> Street, and was constructed in 1998. It is located southeast of the intersection of Hwy 412 West and I-49. This location allows for quick access to Hwy 412 West, I-49, and Don Tyson Parkway. Operations units housed at this station include Ladder 6, Engine 22, and Ladder 21. Ladder 6 is a 2014 Sutphen Monarch quint with a 75' stick ladder, a Rowe CAFS system, and a 1,500 gpm pump. It holds 480 gallons of water and 30 gallons of foam. Ladder 21 is a 1998 Peirce Lance quint unit with a 75' stick ladder and a 1,500 gpm pump. It holds 500 gallons of water, and is a reserve unit. Engine 22 is a 1999 Pierce Saber that is a reserve unit. The community Risk Reduction Division also houses the E.D.I.T.H trailer at this station.

Unit Name	Manpower	Miscellaneous
Ladder 6	3-4*	*Staffing dependent on minimum staffing.
Ladder 21	0	Reserve ladder stored at this station.
Engine 21	0	Reserve engine stored at this station

### ***Jurisdictional Boundaries and Response Areas***

The department's jurisdiction for fire, EMS, HAZMAT and rescue is currently the city limits of Springdale. Until January 1, 2016, the department's EMS (medic unit only) coverage area included neighboring towns and rural communities within Benton and Washington counties. City and department leaders made the decision to reduce the department's EMS coverage area to within Springdale's city limits to ensure that the city was being covered properly. The department still responds to all surrounding areas when requested for mutual or automatic aid for fire, EMS, HAZMAT and rescue situations.

The department's current jurisdiction is divided up into six response areas called FMA's (Fire Management Area). Each fire station has a corresponding FMA. The map on the next page displays the six FMA's and the general vicinity of each of the six stations. Chief Officers established these boundaries to provide for the most effective response times within any given FMA. When creating the FMA's, they also tried to distribute the workload amongst the various units to help ensure that units stay in their FMA as much as possible so that other units do not have to cover because a unit is out of service. In the future, the department anticipates breaking down each FMA into smaller more manageable areas that correlate with the map pages the department currently uses. This will provide for a more detailed assessment of incidents within a particular area as well as be able to assess property values and populations more efficiently. The demographics and occupancies of each FMA differ greatly. Each FMA varies as to whether it is primarily industrial with apartment complexes, mostly residential, heavy commercial, larger residential with a mix of newer commercial, or heavy agricultural.

<b>FMA</b>	<b>Total Road Miles by FMA</b>	<b>Total Area Served in Square miles by FMA</b>	<b>Population by FMA</b>
<b>1</b>	69.767	5.05	10,770
<b>2</b>	55.463	5.09	8,841
<b>3</b>	62.231	6.99	12,705
<b>4</b>	127.011	15.58	13,890
<b>5</b>	68.060	6.81	16,887
<b>6</b>	82.309	7.56	8,486

*Table 9: This table shows the total road miles by FMA, the total square miles by FMA, and the population by FMA according to the 2010 Census.*

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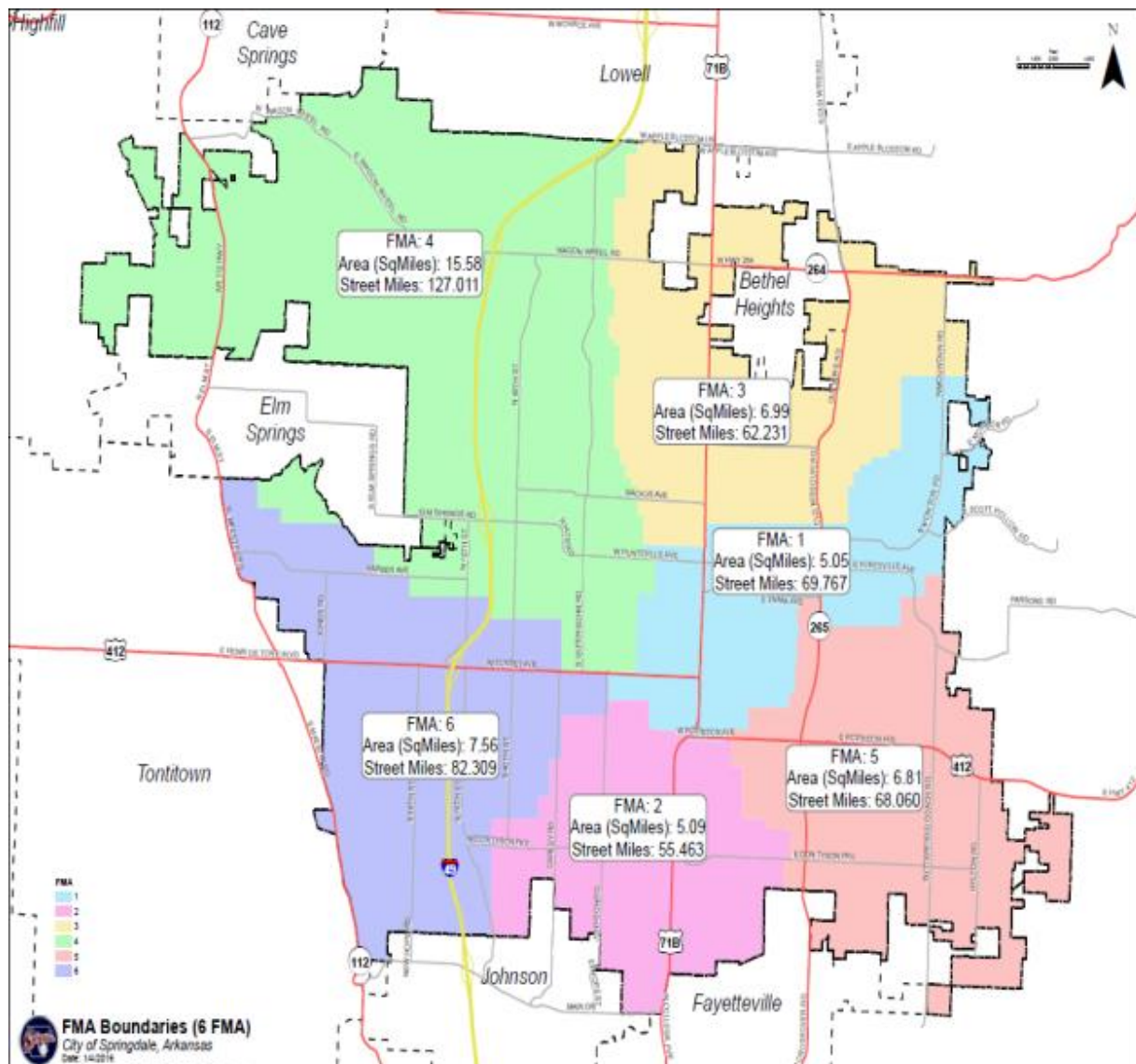


Figure 14: This map shows the total area in square miles of each FMA, in addition to the total amount of street miles to be covered in each FMA. The department covers an area of 47.250 square miles. With six stations covering this area, it averages out to 6.96 square miles per station. This is below the CFAI and national standard that states if an area protected by a fire company exceeds 9 square miles, it will result in extended response times. As a whole, the department falls under the national average. However, if you look at each FMA individually, you will see a different story, especially where future growth and expansion are planned. Station 4 serves an area of 15.58 square miles. That is nearly double the square mileage recommended by CFAI, and triples the square mileage of other FMA's.

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Ambulance response areas throughout the city are divided into four response areas called AMA's (Ambulance Management Area) because we currently have only four medic units running front line service. Stations 2, 3, 4, and 5 house medic units and the AMA numbers are associated with those stations. The units are stationed in stations that surround the most densely populated area of the city so there is always a unit in close proximity to the most populous areas. This has proven to help distribute workload.

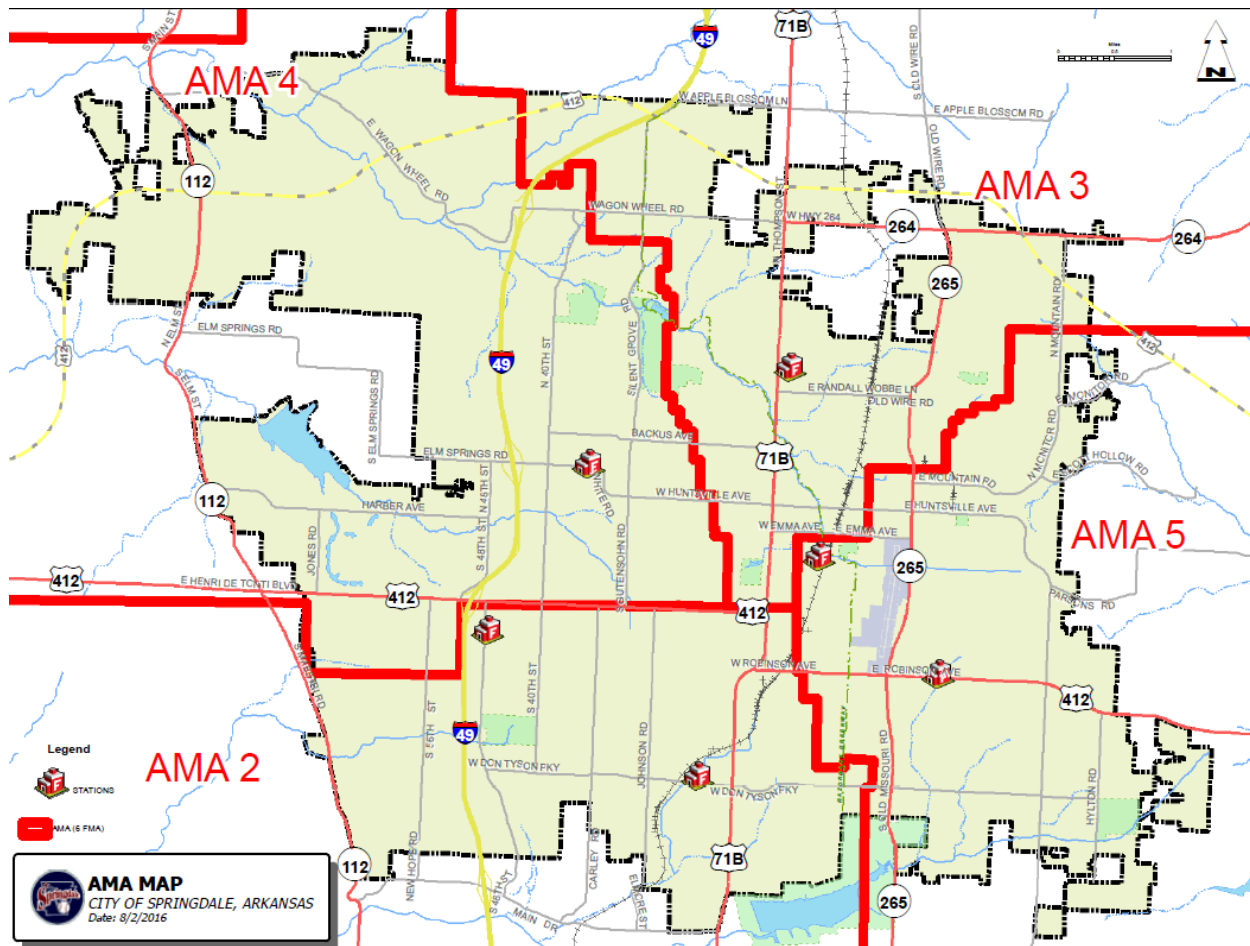


Figure 15: This map represents the Ambulance Management Areas (AMA's) for the city. Medic units are stationed in Stations 2, 3, 4, and 5. FMA's one and six have been split between the closest units.

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## Risk Assessment

The department used its current policy 501.1 (Standard Alarms) to classify incident types into one of these four categories based on the current alarm response. Those alarms categories are:

1. **Still Alarm:** Single Company Responses      Low Risk
2. **Standard Alarm:** 3 Engines, 1 Ladder, 1 Medic, 1 Battalion Chief      Moderate-Maximum
3. **Special Alarms:** Entrapment, HAZMAT, Tender, Technical Rescue, and Mayday  
Moderate-High/Special Risk
4. **2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Alarms:** Standard Alarm assignment with 2 - 4 fire additional companies  
High/Special-Maximum Risk

Additional information on alarms and assignments can be located in Appendix F

The risk assessment outlines some of the department's incident responses and then classifies those risks based on what a standard call within each call type would entail. Not every event is the same and certain incidents may move to a higher or lower risk based on the situation. The incident commander has the authority to increase or decrease the alarm type based on the situation.

The goal of the department is to have all higher risk areas and facilities documented and on file so if an incident occurs everyone from dispatch to firefighters will know that the risk involved with the incident is higher than normal and an appropriate assignment will be dispatched, and firefighters will know of hazards in advance.

### ***Key Risk Assessment Terms***

(Center for Public Safety Excellence, 2015)

1. **Hazard:** Hazards are the causes of danger and peril in the community. Hazards are or become present in a variety of means:
  - **Human:** Examples of human hazards include danger or peril caused by intentional, accidental, physiological or psychological human action or experience.
  - **Material:** Examples of hazardous materials include solids, liquids, gases, radiological, explosive, and products that if not effectively contained and transported are a threat to human life and property.
  - **Mechanical:** Examples of mechanical hazards include danger or peril caused by failure of equipment or material, the lack of required safety features of equipment or material, and/or the failure of safety features of equipment of material.



- **Natural:** Examples of natural hazards include danger or peril caused by weather such as the extreme cold or heat, heavy rains, flooding, tornados, lightning, high wind, hurricanes, ice storms, earthquakes creating danger or peril.
2. **Threat:** Threats are the likelihood or probability measured regarding injury or loss from danger or peril in a community. Threats can be predicted utilizing quantifiable data or intelligence considering historical frequency and/or trend occurrence.
  3. **Consequence:** Consequence is the measure of disparate outcome that is significant with a specific danger or peril injury or loss in a community. The consequence can be measured in a variety of ways:
    - **Emotional:** Loss of friends, family and/or property; community fear and/or sadness, both short and/or long term.
    - **Economic:** Loss of quality of life, jobs, property and/or community tax revenue
    - **Historic:** Loss of community historic value, interest or attraction
  4. **Impact:** Impact is the emergency event's drain on the community's standard for deployment and coverage. It considers specific emergency incident event resource commitment measured against remaining resource deployment and coverage capability. This can be a helpful factor in calculating community risk category levels. A community's threat of injury or loss increases as fire and emergency resources become depleted and are less (or not) available for emergency incident mitigation.
  5. **Risk:** Risk is the program classification type and category degree of potential danger and/or peril of injury or loss. For CFAI purposes risk is classified and categorized in typically the following ways:
    - **Classification by Program**
      1. Domestic Preparedness(terrorism, attacks, major disasters, large scale emergencies)
      2. Fire Suppression (Non-structure and Structure)
      3. Emergency Medical Services (EMS)
      4. Technical Rescue (Basic and Advanced)
      5. Hazardous Materials (HAZMAT)
      6. Aviation Rescue and Firefighting
      7. Wildland Fire Services (Both 6 and 7 are measured under category 2 for SFD due to the low frequency of aircraft incidents and the small size of brush/grass fires in SFD's jurisdiction)
    - **Categorization by Degree**
      1. Low
      2. Moderate
      3. Maximum
      4. High/Special

Pictured to the right is the probability and consequence matrix. It is used to help the department assess the likelihood and severity of events that could occur within our community. It also helps us to judge the impact those events could have on the department and our city. Using this matrix, the department was able to look back at its past three years of incidents and project the likelihood of future events to occur. For example, most EMS calls are typically high probability and low risk, and they would fall into the "Moderate Risk" category of the matrix. However, a large commercial airliner crash would be low probability and high risk so it would fall into the "High/Special Risk" section. This type of information is very important when determining the distribution and concentration of resources. Historical data from 2013 to present was used to evaluate the risk associated with specific types of incidents. This allowed us to categorize those incident types based on the level of risk.

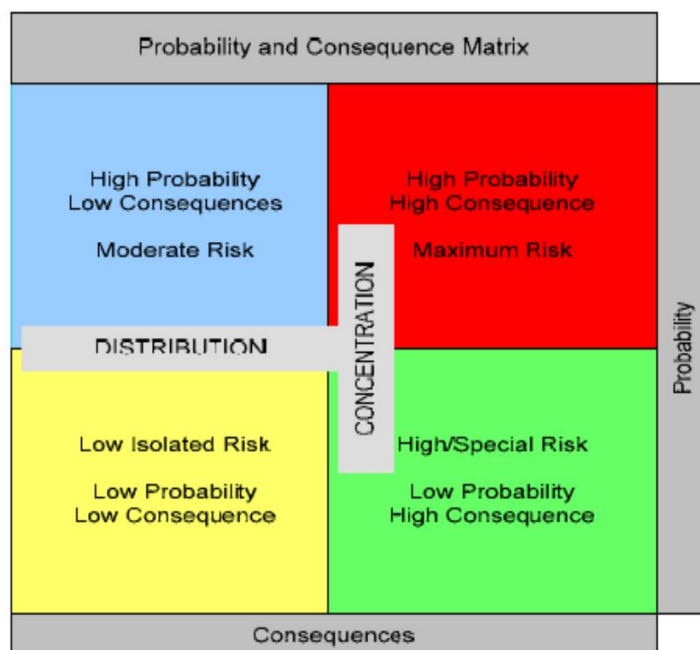


Figure 16: The probability and Consequence Matrix is used by SFD when assessing the risk of various incident types

As you move from left to right on the matrix above, consequences of an incident increase, creating a need for increased distribution of fire stations and resources to cover areas at risk. As you move from bottom to top, the need for resources and units to be concentrated in a specific area increases. This is due to the higher probability of a specific higher risk incident that would require more labor occurring in specific occupancies or areas. Although no incident comes without some risk, the department must focus most of its efforts on preparing for moderate and maximum risk incidents while at the same time developing and disseminating a plan for the high consequence and low probability risk incidents.

## Risk Assessment Methodology

The department conducted its risk assessment by utilizing the knowledge and experience of its most valuable asset, the on-duty line personnel. This was the first time that the department had conducted a formal risk assessment to identify and address potential risks. It was decided that for the best results both target hazards and risk by incident type should be addressed. The first part of the methodology section identifies the method used for target hazards and the second shows the method used for risk based on incident type.

### **Target Hazards**

Target Hazards were assessed and prioritized in each FMA. Target Hazards were identified and categorized using the information that has been collected in *Firehouse RMS®* as well as line firefighters' historical knowledge of the area and the records on file with our Community Risk Reduction Division. This information allowed us to identify occupancies and areas that have a higher risk of incident or higher impact on the department and/or the community based on factors such as life/safety, fire load, hazardous material, structural dangers.

Target hazards were identified utilizing the following criteria based on the occupancies and construction types that are currently and most likely to be located in The City of Springdale in the future. The criteria for an occupancy to be evaluated as a potential target hazard included but was not limited to the following criteria:

1. Schools and childcare facilities
2. High-rise buildings
3. Large public assembly occupancies and churches
4. Stadiums, reviewing stands, and amusement parks
5. Hospitals, sanitariums, and nursing homes
6. Shopping malls
7. Individual hazardous occupancies with conditions that have or have not yet been identified by the department
8. City, county, and state buildings
9. Jails and prisons
10. Occupancies that present difficult challenges either through accessing or mitigation
11. Large mercantile, industrial, and business occupancies over 6,000 square feet
12. Large unoccupied buildings over 6,000 square feet
13. Buildings under construction, remodel, or demolition

Occupancy lists of between 135 and 316 occupancies per FMA, dependent on the size of the FMA, were distributed to each station and shift. All three station captains received the same list. All occupancies on the list required that the station and shift answer the same three questions and rank them on a scale of 1-10 with 1 being lowest and 10 being the highest. Those numbers were averaged and a list of target hazards was then compiled. The three questions were:

1. What would be the probability of occurrence? (What is the likelihood of occurrence based on building construction, protection systems in place, past history, and overall general knowledge of the occupancy?)
2. What would be the impact on the community? (What would a total loss of this occupancy be on our community? Is there a potential for high loss of life? Does it have cultural significance? Would the tax base suffer a great loss? Would it create significant job loss? Would an incident require mass evacuations or have potential for mass destruction?)
3. What would be the impact on the department? (How many resources would it take our department to handle a full-scale event? Would outside resources be required? Are the required resources available?)

After the department completed the surveys, the scores for each question were averaged out using an Excel spreadsheet. The data was then entered into Heron's formula for modified tetrahedrons where P=probability of occurrence, I=Impact on the department, and C=Impact on the community. Each variable was assigned the 1-10 average score based on the surveys of all three shifts. The formula appeared as follows:

$$\text{Risk} = \sqrt{\frac{(pc)^2}{2} + \frac{(ci)^2}{2} + \frac{(ip)^2}{2}}$$

Equation 1: Herons Formula for Modified Tetrahedrons



Figure 17: As numbers increase in any of the axis, the area of the triangle grows showing increased risk.

The shaded portion in figure 17 shows the result of answering these three questions; it is called "the risk axis". Using the risk axis you are able to calculate the potential risk and have a visual reference as to how high of potential risk units could be facing during an incident or with a specific target hazard. As the numbers associated with a risk increase towards 10, the greater the risk is on that axis. As the area of the triangle increases as a whole, the total risk associated with an incident or target hazard becomes greater, the department then placed the target

hazard into the low, moderate, maximum, or high/special category. Target hazards are evaluated for addition or removal annually during station meetings.

### **Incident Type**

The department utilized the same method of scoring for assessing risk by incident type that it used for target hazards. Various ranks and members of the department were given a list of incident types based on NFIRS coding and answered the same three questions by giving them a score of 1-10. The scores for each type of incident were then input into Heron's formula and assigned a cumulative risk score. Based on the score for each incident type, incidents were placed into the low, moderate, maximum, or high/special category of the probability consequence matrix.

The incident type assessment was completed for Fire, EMS, HAZMAT, and Rescue based incidents. These assessments are an integral piece to the Risk Assessment/Standard of Cover Document. Incident types are evaluated annually for any major changes.

Moderate Risk Incidents	Maximum Risk Incidents
Low Risk Incidents	High/Special Risk Incidents

Table 10: Example of Probability and Consequences Matrix Based on Incident Type



Figure 18: SFD crews respond to a generator fire on the roof of Northwest Medical Center



## City-Wide Fire Risk Assessment

Fire Departments across the country are seeing a general decrease in the amount of structure/building fires that they are fighting. That being said, there has been an increase in the types of incidents that the fire department must respond to including EMS, Hazardous Materials (HAZMAT), rescue, and domestic terrorism. With the increase in types of calls that the department must respond to and with a better understanding of fire growth in modern construction and materials, we must remain ever vigilant to keep citizens and ourselves safe. The Springdale Fire Department responds to a wide variety of fires types that can affect the department and the citizens in different ways. From small car and grass fires to fires in homes and at large commercial facilities, the department must do its best to stay aware of all of the possible risks and hazards. This is done through our inspection program and department training.



Figure 19: SFD crews battle a fire in a garage

Building Fires are the most frequent type of fires that we encounter. This can range from a small room and contents fire to a fully involved warehouse type facility or commercial building fire. These account for 23.6% of fire incidents. Grass and Brush fires are the most common groups of fires accounting for 26.6% of all fires. However, as you can see, the number of grass and brush fires are largely dependent on the year and the weather patterns we have experienced. These fires are generally smaller and require minimal staffing and equipment. Passenger vehicle and cooking fires are the next most frequent groups accounting for 15.8% and 08.6% of all fires.



Figure 20: Grass Fires such as this are the most typical types of wildfires SFD encounters

Fires are dynamic and constantly changing and the department must send the proper amount of resources to mitigate an incident before it grows larger than the responding units can handle. While this is not accomplished 100% of the time, the assignments used on incidents have traditionally been successful in mitigating fires before they become too large for the department to handle.

This map shows where the majority of the department's fire calls are located. If you compare this image with the population density map (Appendix A) and building density map (Appendix B), you will see that most fires occur where populations and buildings are most dense. Most of the fires in these areas are mitigated quickly because crews can arrive on scene promptly. However, fires in some of the more remote areas of the city present a higher risk due to extended response times.

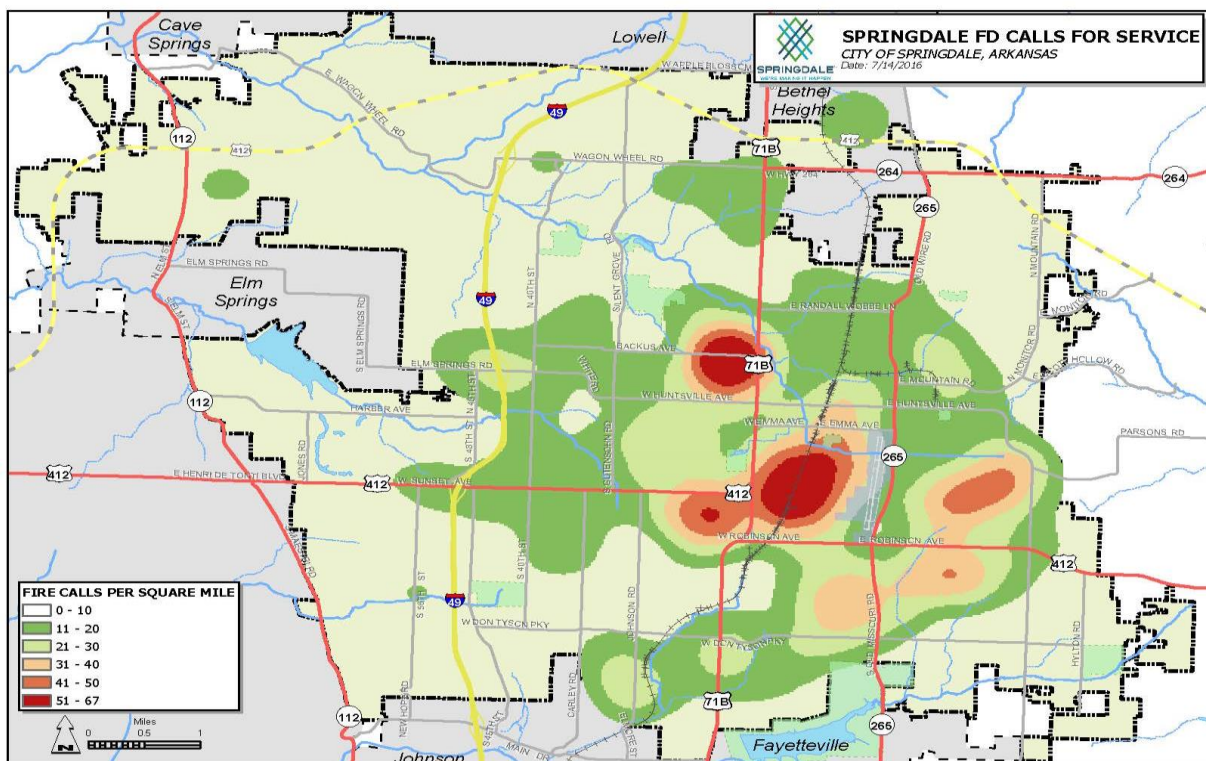


Figure 21: Heat map of all fire incidents within The City of Springdale

<b>2015-2017 Fire Calls By Type of Fire (within city limits)</b>					
Fire Type	2015	2016	2017	Total	Percentage
Building Fire	48	44	71	163	23.05%
Fire in structure other than building	2	3	2	5	.075%
Cooking fire confined to area cooking	24	19	23	66	8.6%
Chimney flue	3	4	4	14	2.10%
Fuel burner boiler malfunction	0	2	0	2	.30%
Trash or rubbish fire contained	4	4	0	8	1.20%
Fire in a mobile home	0	1	0	1	.15%
Fire in a portable building	0	1	1	2	.30%
Passenger Vehicle Fire	27	36	38	101	15.8%
Road Freight Vehicle Fire	2	3	7	12	1.80%
Water Vehicle	0	0	1	1	.15%
Camper or RV	0	1	1	2	.30%
Off Road Vehicle Fire	1	1	0	2	.30%
Natural Veg. Fire, Other	3	6	5	14	2.10%
Brush/Grass Mixture Fire	22	25	17	64	9.58%
Grass Fire	33	39	37	109	16.32%
Outside Rubbish Trash or Waste Fire	20	15	16	51	7.63%
Dumpster Trash Receptacle Fire	10	14	16	40	5.99%
Special Outside Fire	5	1	1	7	1.05%
Outside Storage Fire	2	1	0	3	0.45%
Outside gas or vapor comb.	0	1	0	1	.15%
Outside Equipment Fire	2	2	5	9	1.35%
<b>Totals</b>	<b>207</b>	<b>221</b>	<b>239</b>	<b>668</b>	<b>100%</b>

Figure 12: This chart lists all of the different types of fires that SFD responded to between 2015 and 2017. It also lists the percentage of total fire calls for each category.

<p><b><u>Moderate</u></b></p> <ul style="list-style-type: none"> <li>• Fire in Structure other than building</li> <li>• Cooking Fire</li> <li>• Incinerator Overload</li> <li>• Fuel Burner/Boiler Fire</li> <li>• Commercial Compactor Fire</li> <li>• Fire in Portable Building Used as Fixed Structure</li> <li>• Aircraft Standby</li> <li>• Commercial Fire Alarm</li> </ul>	<p><b><u>Maximum</u></b></p> <ul style="list-style-type: none"> <li>• Residential Structure Fire</li> <li>• Commercial Structure Fire</li> <li>• Chimney or Flue Fire</li> <li>• Fire in Motorhome or RV Used as Residence</li> <li>• Fire in a Mobile Property Used as a Fixed Structure</li> <li>• Small Aircraft Fire</li> <li>• Forest/Brush Fire Greater than 50 Acres</li> <li>• Munitions/Blasting Agents/Fireworks Explosion</li> </ul>
<p><b><u>LOW</u></b></p> <ul style="list-style-type: none"> <li>• Passenger Vehicle Fire</li> <li>• Road/Freight or Transport Vehicle Fire</li> <li>• Water Vehicle Fire</li> <li>• Motor Home or RV Fire</li> <li>• Off Road Vehicle or Heavy Equipment Fire</li> <li>• Brush/Grass or Vegetation Fire</li> <li>• Trash/Rubbish/Dumpster Fire</li> <li>• Cultivated Crop/Vegetation Fire</li> <li>• Overpressure rupture of boiler/steam/gas</li> <li>• *Controller of Illegal Burning</li> <li>• *Heat from Short Circuit/Wiring Problems</li> <li>• Power-line Down</li> <li>• Residential Fire Alarm</li> </ul>	<p><b><u>High/Special</u></b></p> <ul style="list-style-type: none"> <li>• Commercial Structure Fire in Known Target Hazard</li> <li>• Commercial Aircraft Fire</li> <li>• Large Scale Natural Disaster</li> </ul>

Table 11: SFD's level of risk for fire related incidents

\*Denotes non-emergent response

(Continued on Next Page)

## City-Wide EMS Risk Assessment

Since 2013, the department has seen a steady uptick in calls per capita with no increase in labor or equipment. The department anticipates that moving our EMS response area to within the city limits will lower our annual call volume as well as the lower the total committed time on calls to accommodate future growth of the city. This should take some of the burden off the EMS system and allow for better delivery of service to the citizens of Springdale. However, this is only a temporary fix, as call volumes will likely increase with population and population density increases, as well as increases in commercial occupancies and roadways. With having four ALS medic units, five engines and two ladder companies capable of providing BLS service, most events can be handled in a timely manner. However, at times, the department's resources are stretched to their limits and mutual aid assistance from outside agencies is required. An extended response time poses a major risk to citizens who have come to expect a timely response.

There is no way to predict exactly what calls we will have on any given day, but the majority of the department's calls for EMS service are: trauma, respiratory, cardiac, and behavioral related. The trauma, respiratory and cardiac call numbers have remained consistent, but the behavioral calls are increasing each year. The increase in behavioral type calls causes an increase in risk to both citizens and personnel due to the unpredictability of the situations that may be faced.

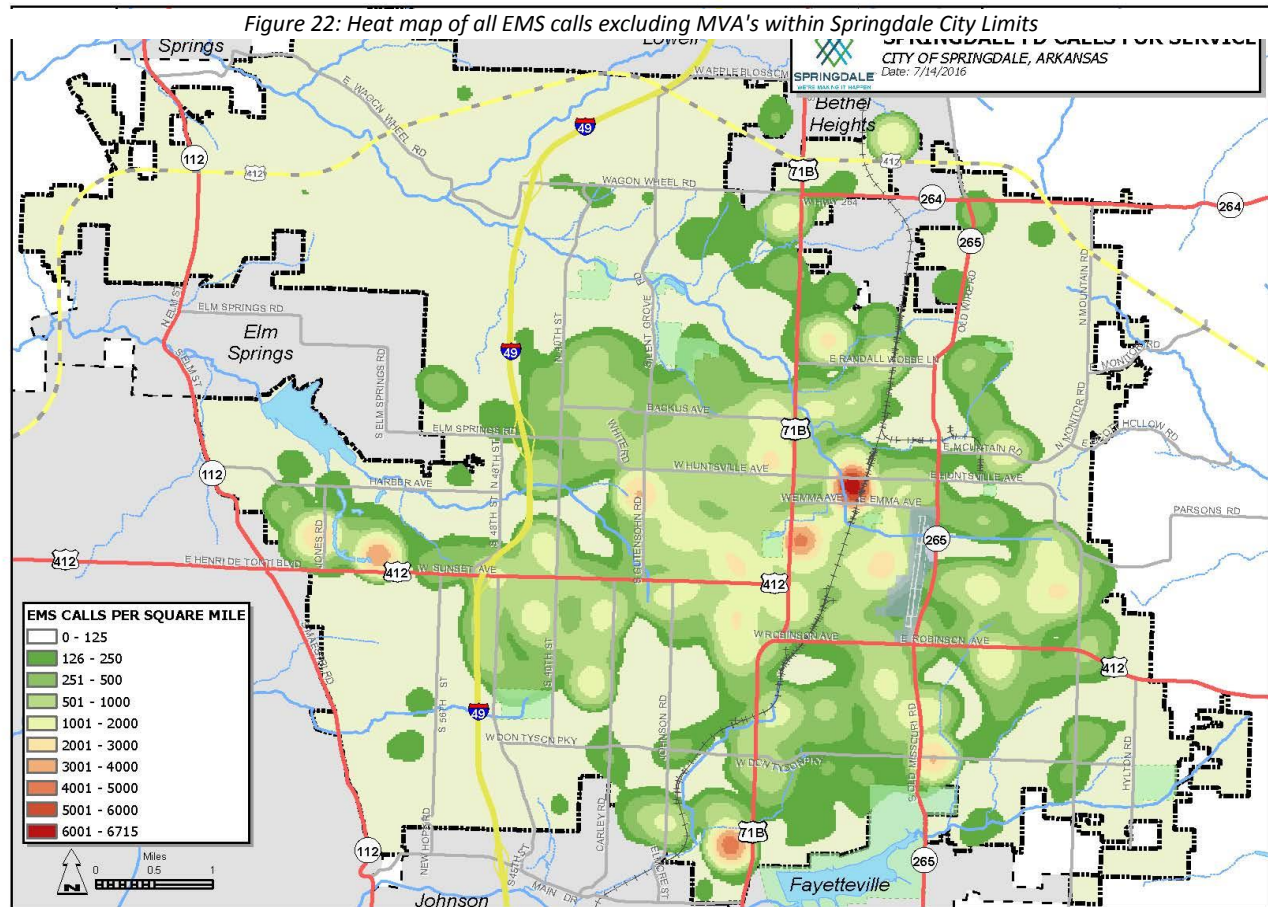


<p><b>Moderate</b></p> <ul style="list-style-type: none"> <li>• Lights and Siren EMS response</li> <li>• Cardiac Arrest</li> <li>• Electrocution/Trapped by Power-lines</li> <li>• *Bomb Scare</li> <li>• *Police/SWAT Standby</li> </ul>	<p><b>Maximum</b></p> <ul style="list-style-type: none"> <li>• Multiple Patient EMS Incident 5-7 Patients</li> </ul>
<p><b>Low</b></p> <ul style="list-style-type: none"> <li>• *Assist other EMS Agency</li> <li>• *Emergency No Lights and Siren EMS Response</li> <li>• EMS standby for hazardous condition</li> <li>• Citizen Assist</li> </ul>	<p><b>High/Special</b></p> <ul style="list-style-type: none"> <li>• Mass Casualty/Multiple Patient EMS Response 8 or More Patients</li> <li>• Large Scale Natural Disaster</li> </ul>

Table 12: SFD's Level of Risk for EMS related incidents

\*Denotes non-emergent response





One of the biggest risks that the department faces from an EMS standpoint is the increasing potential for mass casualty incidents (MCI) such as large chemical release, large-scale motor vehicle accidents, or an active shooter situation. The department has had MCI's in the recent past at large industrial facilities. SFD is taking the necessary steps to prepare by conducting mass casualty drills with other departments and working with The Springdale Police Department on active shooter training. The map above shows the locations and frequency of the EMS incidents within The City of Springdale.

(Continued on Next Page)

## City-Wide Technical Rescue Risk Assessment

<b>Moderate</b> <ul style="list-style-type: none"> <li>• Aircraft Rescue Standby</li> <li>• MVC with Injuries (1-4 Patients)</li> <li>• MVC with unknown Injuries</li> <li>• Vehicle Vs. Pedestrian MVC</li> </ul>	<b>Maximum</b> <ul style="list-style-type: none"> <li>• Extrication of Victim from Vehicle</li> <li>• MVC with 5 or More Patients</li> <li>• Removal of Victim from Elevator</li> <li>• Extrication of Victim from Machinery</li> <li>• Other Extrications</li> </ul>
<b>Low</b> <ul style="list-style-type: none"> <li>• *Lock-In/Lock Out</li> <li>• *Search for Person on Land, Water, or Underground</li> <li>• Stalled Elevator</li> <li>• Surf or Watercraft Rescue</li> <li>• MVC Single Unit Requested</li> <li>• Trapped by Power-lines</li> </ul>	<b>High/Special</b> <ul style="list-style-type: none"> <li>• Extrication of Victims from Building or Structure such as Building Collapse</li> <li>• Trench/Below Grade Rescue</li> <li>• Confined Space Rescue</li> <li>• High-Angle Rescue</li> <li>• Swift-water/Water/Ice Rescue</li> <li>• Large Scale Natural Disaster</li> </ul>

Table 13: SFD's level of risk for rescue related incidents  
 \*Denotes non-emergent response



The term rescue for the Springdale Fire Department covers a wide range of possible incidents including motor vehicle accidents/extrications, elevator, high angle, trench, and confined space rescue. Although these types of calls are less frequent for the department, the possible consequences associated with them dictate that personnel must be at their best to prevent any further injury to the patient or themselves. The table on the next page shows that the majority of the SFD's incidents requiring rescue are motor vehicle extrication calls and elevator rescue incidents over the past three years. The department has made significant strides to improve its efficiency on auto extrications by placing basic equipment on various apparatus throughout the city, as well as upgrading the heavy rescue equipment carried on Ladder 1. In addition, the majority of the department's personnel are certified as Auto Extrication Technicians. Auto extrications will likely increase as traffic congestion increases and drivers are more distracted and driving more aggressively. Improvements in car safety features have led to decreases in severity of some accidents, but those improvements pose a higher risk to firefighters.

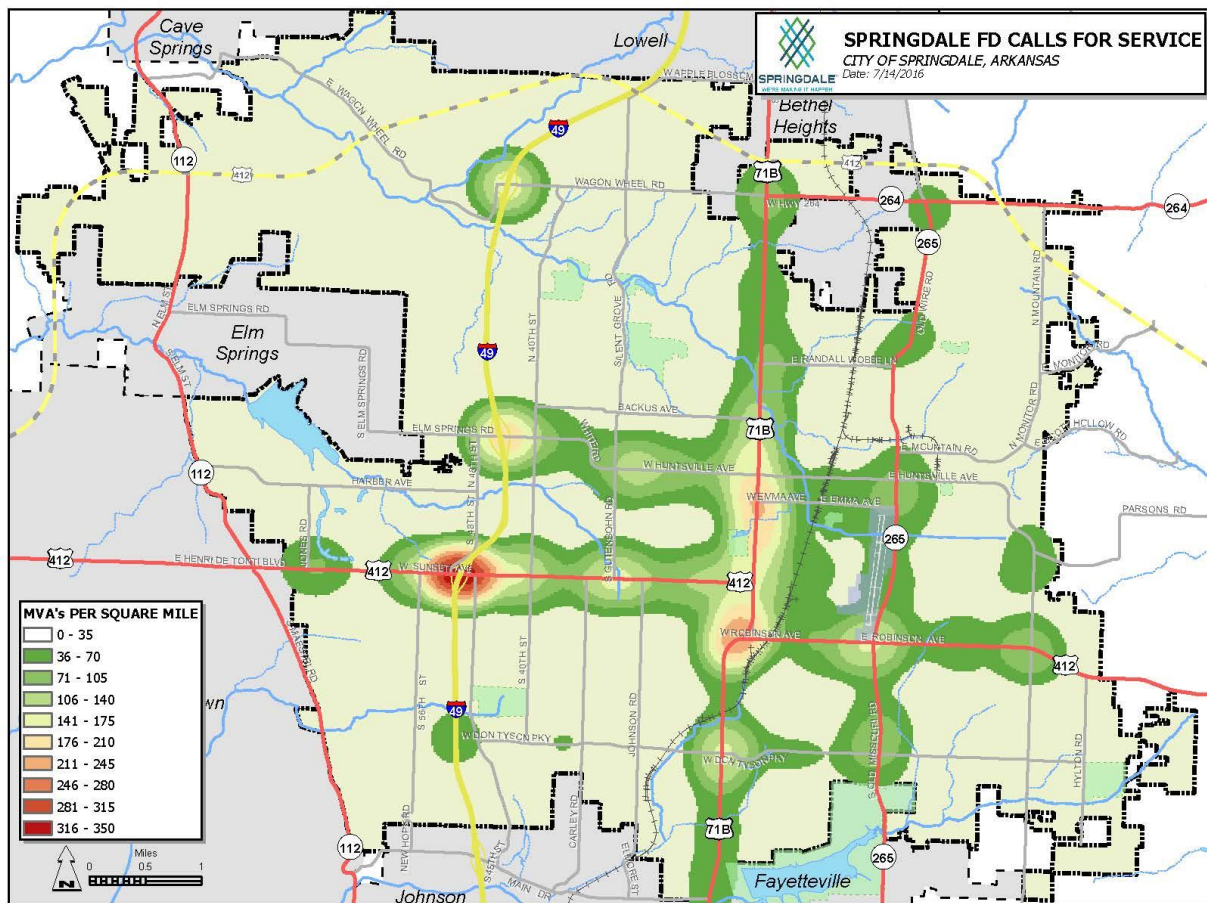


Figure 23: This map shows the location of all motor vehicle accidents MVA's within the city Limits. The darker red areas represent where the most accidents occur. As you can see, the majority of MVA's occur on main roads that have higher speeds. This increases the potential for extrication.



The threat of swift-water rescue has declined overall as the city improves drainage and roadways throughout the city, but there are still areas of concern in some small pockets of the city. Most potential swift water incidents do not pose a great risk and can be mitigated with the lifejackets and rope throw bags on each unit; however, the department still houses a more comprehensive array of swift water equipment at Station 1. The department's swift water technicians can pick up this equipment prior to the arrival of severe weather.

Most elevator incidents occur in three facilities in the city and usually do not involve injuries to occupants. Nevertheless, as commercial growth increases and the elevators that are currently in operation age, the department must acknowledge and prepare for these risks. The



Figure 24: Department members training for machinery entrapment incidents.

department is in a similar scenario with other rescue disciplines such as trench, structural collapse, and confined space. With the high amount of industrial operations in the city, machine rescue and confined space entry is held in high regard by the safety personnel at these businesses. The risk associated with a potential incident is also a valid concern for the department.

2015-2017 Technical Rescue Calls by Incident Type					
Call Type	2015	2016	2017	Total	%
Motor Vehicle Accident (MVA)	662	518	505	1685	94.50%
MVA Vehicle vs. Pedestrian	24	13	30	67	3.76%
Auto Extrication	6	2	4	12	0.67%
Lock-In/Lock-Out	1	0	1	2	0.11%
Search For Person	1	0	1	2	0.11%
Elevator Rescue	0	0	3	3	0.17%
Structural Collapse	0	0	0	0	0.00%
Trench/Below Grade Rescue	0	0	0	0	0.00%
High-Angle Rescue	0	0	1	1	0.06%
Water Rescue	3	1	4	8	0.45%
Confined Space Rescue	1	0	0	1	0.06%
Machinery Rescue	1	0	1	2	0.11%
<b>Totals</b>	<b>699</b>	<b>534</b>	<b>550</b>	<b>1783</b>	<b>100%</b>

Figure 25: This chart represents the total amount and the types of rescue incidents the department responded to between 2015 and 2017. MVA's are the most common type of rescue. Although the other disciplines are not required as frequently, crews must maintain their skills and knowledge at all times so they are at the ready when incidents do occur.

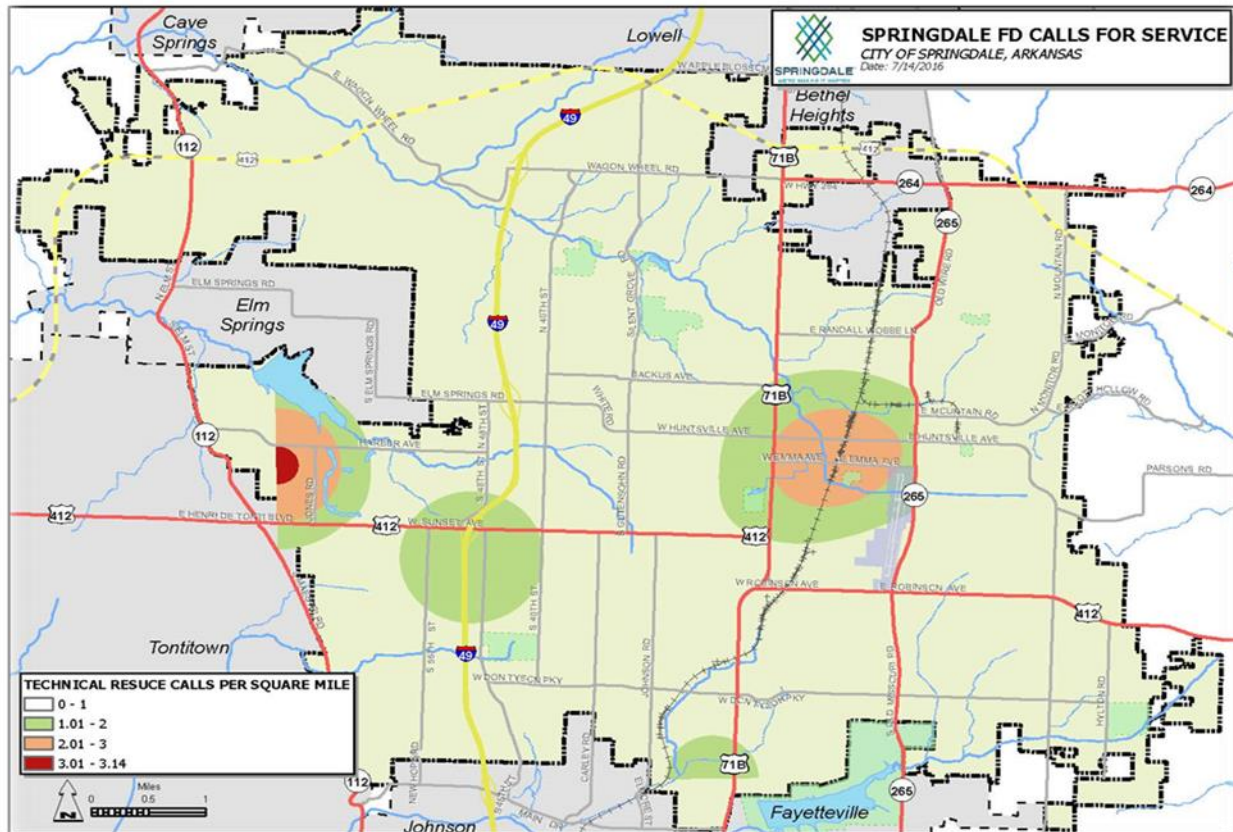


Figure 26: This map represents the location of all the technical rescue calls, except for auto extrication from 2015-2017. The majority of these incidents have been low to moderate risk incidents. Due to the infrequency of these types of events, risks can be even higher for personnel.

The department does prepare for trench rescue and structural collapse rescue, but equipment to properly handle an event (lumber, nails, etc.) would have to be procured at the time of the event, or equipment from an outside agency would have to be brought in to properly handle a significant event.





**City-Wide HAZMAT Risk Assessment**

<p><b>Moderate</b></p> <ul style="list-style-type: none"> <li>• Overpressure Rupture of High Pressure Gas Line</li> <li>• LPG or NG Leak Commercial/High Pressure</li> <li>• Chemical Spill or Leak &gt;20 Gallons</li> <li>• CO w/ occupants/illness</li> </ul>	<p><b>Maximum</b></p> <ul style="list-style-type: none"> <li>• Fuel Spill over 20 gallons</li> <li>• Oil/Combustible Liquid Spill &lt; 20 gallons</li> <li>• Large Commercial LPG or NG Leak</li> <li>• Chemical Hazard w/ Illness</li> <li>• Chemical Spill or Leak up to 55 gallons</li> <li>• Refrigeration Leak/Ammonia w/ no injuries or threat to surrounding area</li> <li>• Radiation Leak/Radioactive Material</li> <li>• Biological Hazard/Confirmed or Suspected</li> </ul>
<p><b>Low</b></p> <ul style="list-style-type: none"> <li>• Fuel Spill &lt; 20 Gallons</li> <li>• *Odor Investigation</li> <li>• *CO Alarm/Incident (no illness)</li> <li>• Overpressure/Rupture of Low Pressure Gas Line</li> <li>• *Chemical Hazard</li> <li>• Chemical Spill or Leak Small</li> </ul>	<p><b>High/Special</b></p> <ul style="list-style-type: none"> <li>• Oil or Combustible Liquid Spill Over 55 Gallons w/ Injuries</li> <li>• Chemical Hazard Mass Casualty or Large Area</li> <li>• Chemical Spill or Leak Unstable Reactive/Explosive Material w/ Large Area Exposed and/or Injuries</li> <li>• Refrigeration Leak/Ammonia with Injuries and/or Threat to Large Area</li> <li>• Biological Hazard Confirmed or Suspected with Mass Casualty</li> <li>• Large Scale Natural Disaster</li> </ul>

Table 14: SFD's level of risk for HAZMAT related incidents

\*Denotes non-emergent response

The city has a wide variety of hazardous materials (HAZMAT) risks, and the Springdale Fire Department HAZMAT unit is capable of handling the majority of the incidents without mutual aid. All members of the department possess operations level HAZMAT certification and the



department is working to get a majority of its members to technician level HAZMAT certification. In the event of a large-scale event, the surrounding cities' HAZMAT teams are able to assist through mutual aid agreements. Natural Gas and LPG leaks are the department's most frequent HAZMAT calls. Although they are more frequent, the risk to the community is not as great unless the leak occurs within a residence or a high life hazard area, or the gas is escaping from a large commercial line. In the past six years,

the department has had one major mass casualty HAZMAT incident when an employee had improperly mixed chemicals at a poultry production generally. Natural gas leaks are the most frequent type of HAZMAT incidents and generally occur in single-family residential homes and are discovered quick enough that effects can be mitigated by a single engine company and if needed a medic unit. Due to the high amount of poultry production and cold storage in the area, refrigeration leaks are a definite risk and are addressed regularly with local businesses and personnel. Roadways in and around the city have high amounts of hazardous materials being transported at any given time. In addition, the railway periodically has transport trains moving large railcars of hazardous materials. Station 3 personnel are given an annual list of hazardous materials that will be transported by rail. As technology changes and threats increase on all fronts, the department is doing it's very best to stay on top of any and all potential threats and new countermeasures. Carbon monoxide poisoning/leak and gas leaks are the most frequent type of HAZMAT incident, but those are generally lower risk and less impact compared to some of the large scale incidents such as ammonia leaks and chemical spills.

<b>2015-2017 HAZMAT Response Calls by Type</b>					
<b>Incident Type</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>Totals</b>	<b>%</b>
Overpressure Rupture of Air or Gas Pipeline	1	0	0	1	0.43%
Combustible and Flammable Gas or Liquid Spills or Leaks, Other	1	0	0	1	0.43%
Gasoline or Other Flammable Liquid Spill	8	13	7	28	12.07%
Gas Leak (Natural or LPG)	45	55	59	159	68.53%
Oil or Other Combustible Liquid Spill	3	3	1	7	3.02%
Chemical Hazard (No Spill or Leak)	2	0	1	3	1.29%
Chemical Spill or Leak	0	1	1	2	0.86%
Carbon Monoxide Incident	11	5	13	29	12.50%
Biological Hazard (Confirmed or Suspected)	1	1	0	2	0.86%
<b>Totals</b>	<b>72</b>	<b>78</b>	<b>82</b>	<b>232</b>	<b>100%</b>

Figure 27: This chart shows the total amount and the types of HAZMAT responses the department had between 2015-2017

WE'RE MAKING IT HAPPEN

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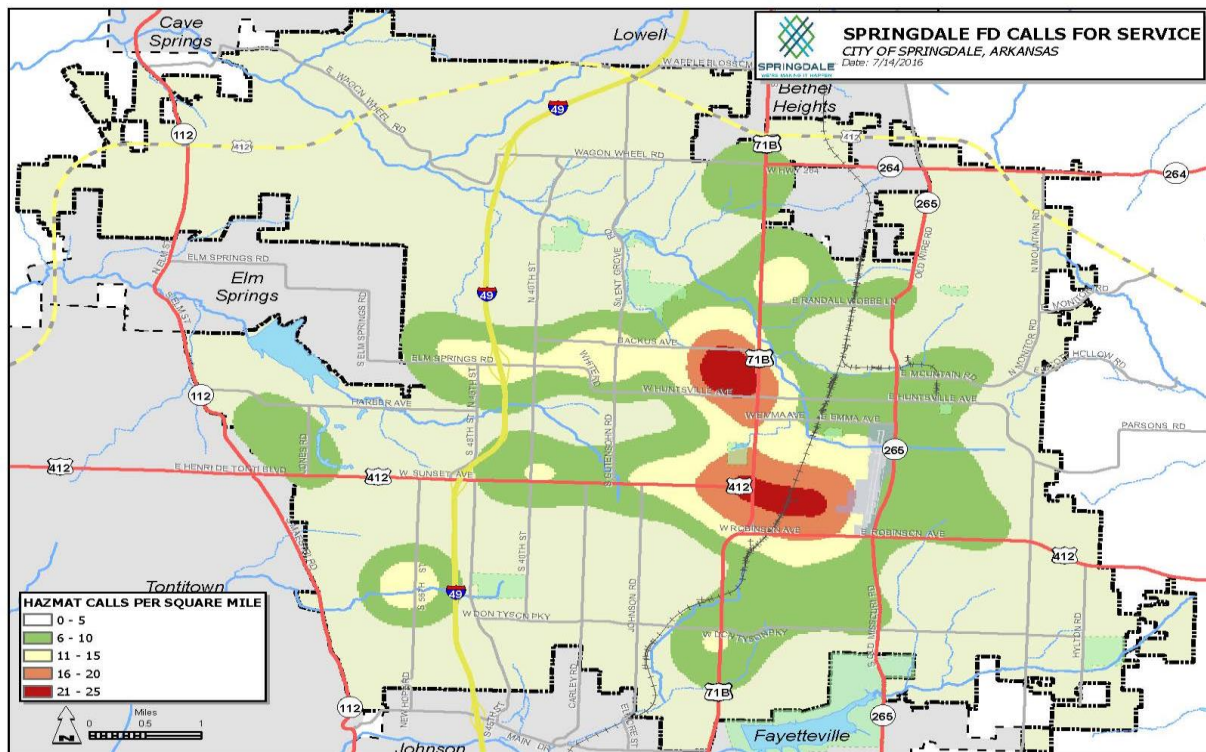


Figure 28: This map shows the location and frequency of all HAZMAT incidents within The City of Springdale from 2015-2017

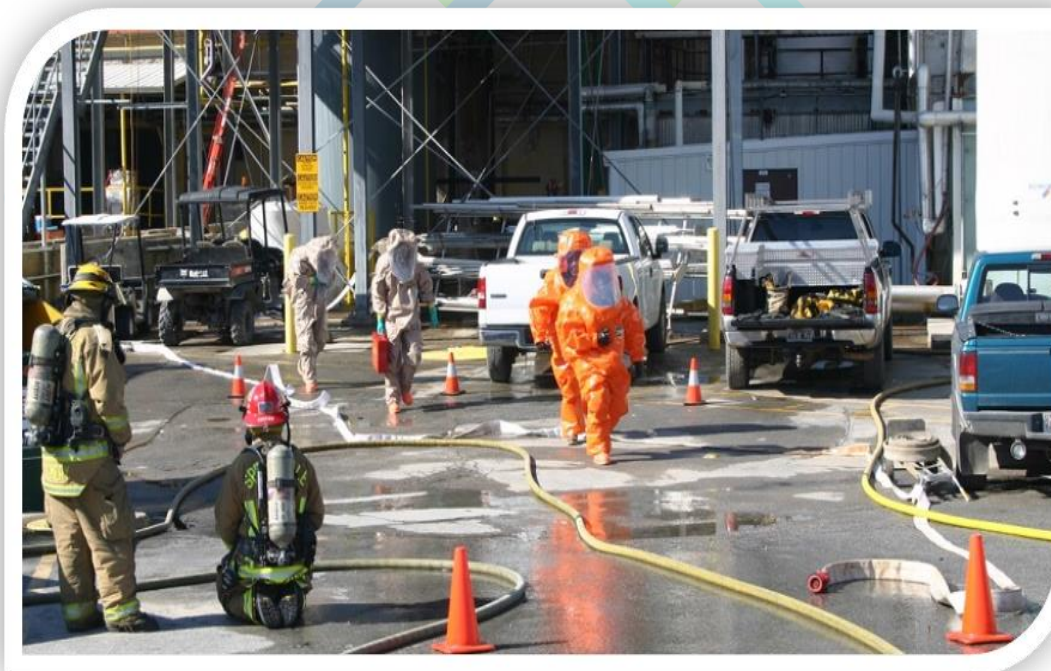


Figure 29: SFD members working at a large anhydrous ammonia leak at one of the many poultry production facilities located within the city.



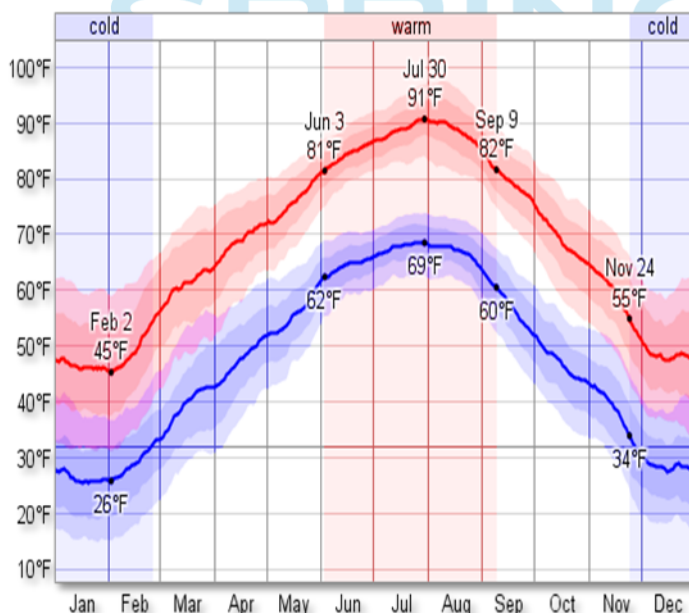
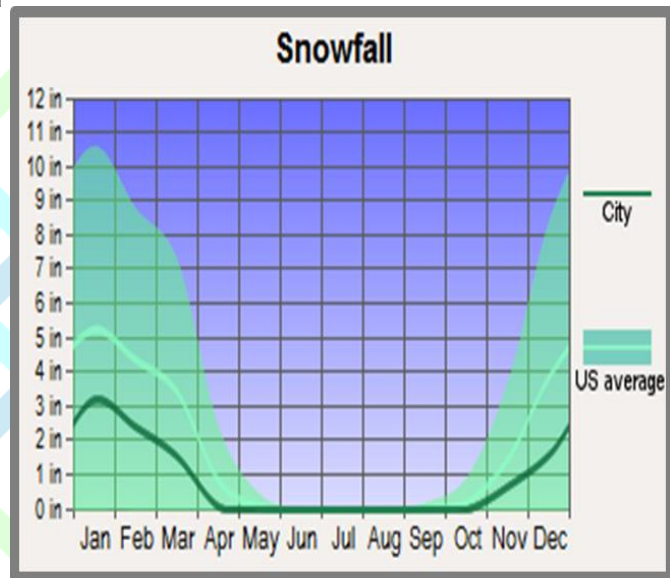
## Other Potential Risks



Figure 30: The Ice Storm of 2009 took down trees and power lines and made accessing incidents very difficult.

included power-lines down, carbon monoxide poisonings and several house fires. Roadways were impassible for several days, and emergency crews had to cut fallen trees in neighborhoods and roadways so that they could get to the scene. When a snow and ice event occurs, response times become severely delayed to ensure the crews' safety. On Feb 9, 2011, an unexpected, 24 inches of snow fell on Springdale. This storm brought traffic to a standstill. Although the call volume was not what it was during the 2009 ice storm, there was still a significant increase from the department's normal

**Snow and Ice-** the City of Springdale does not have consistant amounts of snow and ice events during the colder seasons. However, when these storms do occur they can be very impactful on the citizens and local infrastructure. During the "Ice Storm of 2009", the department responded to 341 calls for service between January 26<sup>th</sup> and January 28<sup>th</sup>. Additional personnel had to be called in to man apparatus because of the increased call volume and lengthy call times. Calls



volume. Within a 24-hour period, crews responded to nearly 50 calls for service. Snow and ice are the most likely and impactful weather risks to the city given the extended travel and transport times due to poor and treacherous road conditions.

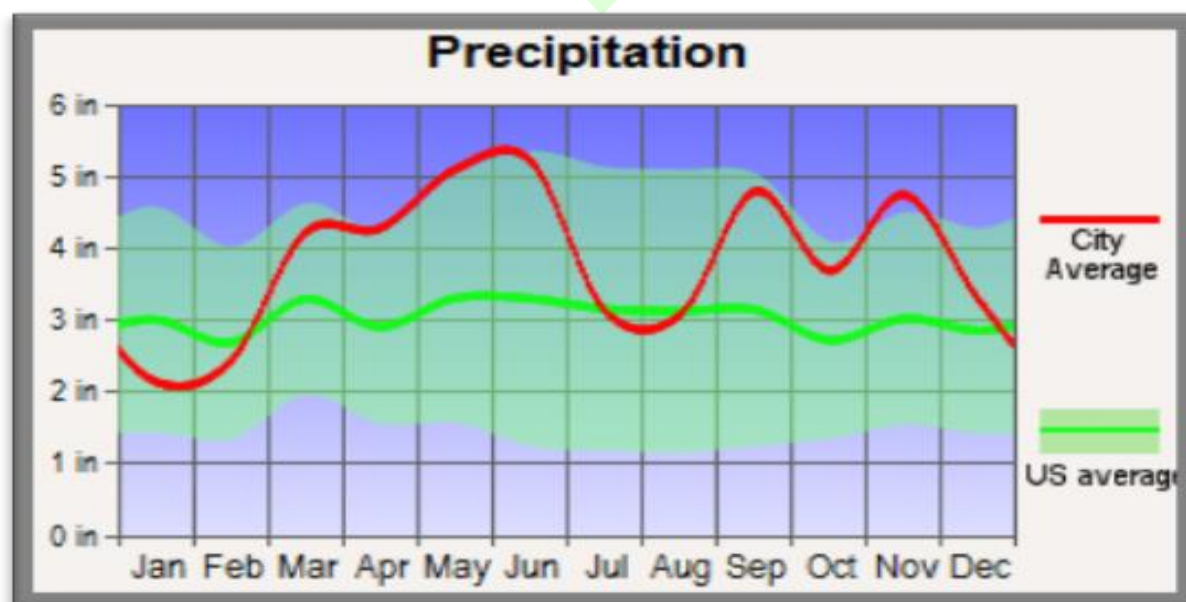
### Hot & Cold Weather Extremes-

Although Springdale is not in one extreme or another when it comes to climate, it definitely has the potential to see both extremes at any given time. Springdale is located in an area that is affected by polar vortexes from Canada, moisture from the Gulf of

Mexico, and jet stream winds from the west. These sudden unexpected changes and extremes in temperature can catch people off guard. Exposure incidents are expected to increase given the growing homeless population and a large blue-collar workforce within the city. Along with the cold, comes increased potential for fires, carbon monoxide incidents and motor vehicle accidents.

The department has been proactive in working with the local schools' athletic trainers to try to reduce heat exposure injuries, through annual training and improved practices. Springdale does not see constant 100-degree days throughout the summer; however, the city is very likely to experience high humidity and high heat, which results in a heat index above 100 degrees. The city does not consistently see drought conditions, but it has experienced droughts within the last 3 years. Hot and dry conditions increase the risk of grass and brush fires as well as cause strain on firefighting personnel, which forces the department to utilize more personnel on certain types of incidents. The chart above shows the average temperatures by month for The City of Springdale.

**Flooding**— The city does not have any large bodies of water such as major rivers or large lakes that pose a flooding risk. However, the city does have a lot of low-lying areas, creeks, streams, drainage and retention areas that have flooded and have the potential to flood again. On April 25, 2011, the region experienced a 100-year flood event and in 2017 had a 500-year flood. In a few short hours, nearly six inches of rain fell on an already saturated ground. Roadways were flooded and the department's crews were performing water rescues throughout the city. During March, April, and May, it is not unheard of to have similar amounts of rainfall. Spring Creek, Springdale Lake, and Lake Elmdale are collectors on flood plains and have the potential for flooding and water rescue. The map on the next page shows Springdale's floodplain areas and the locations where run-off is collected.





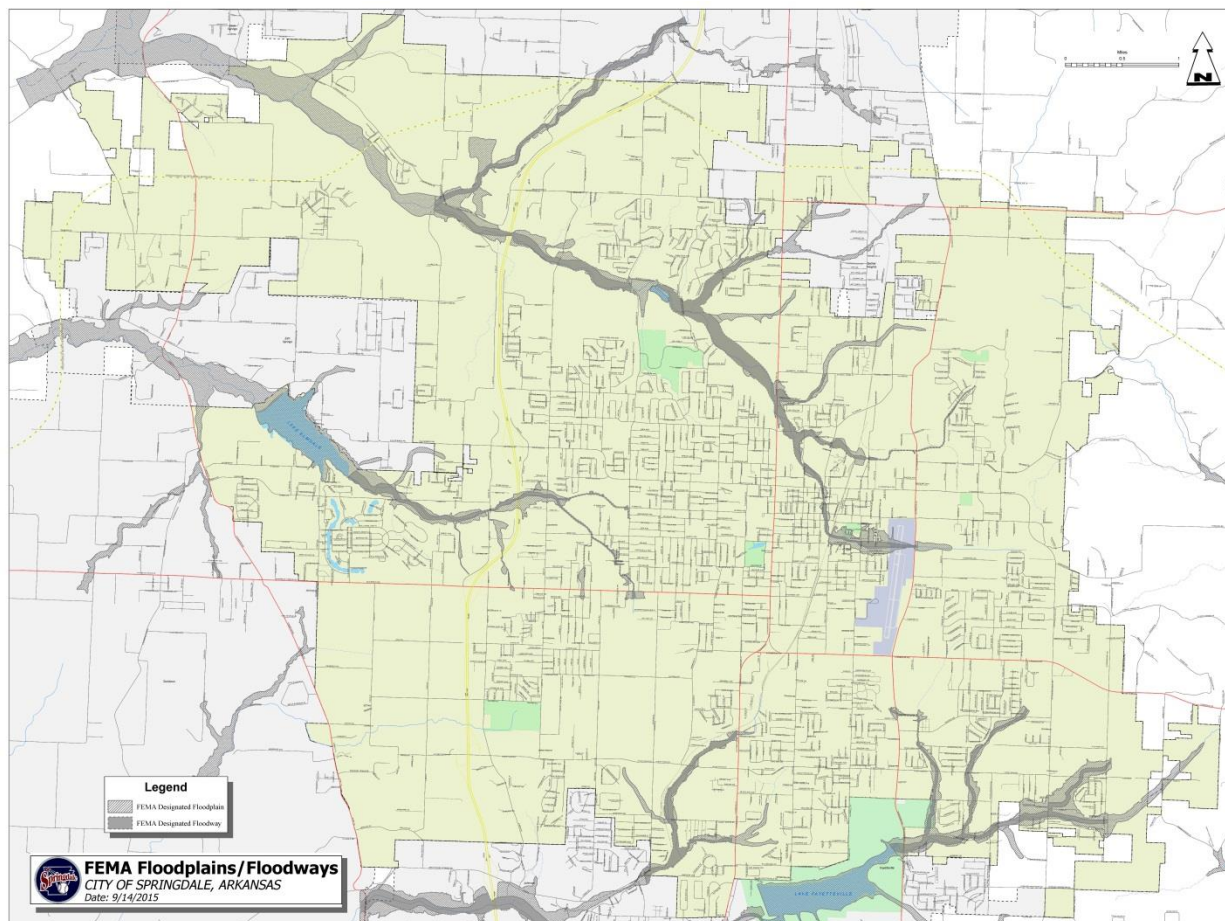


Figure 12: This is The City of Springdale floodplain map. The gray areas are the identified flood plains

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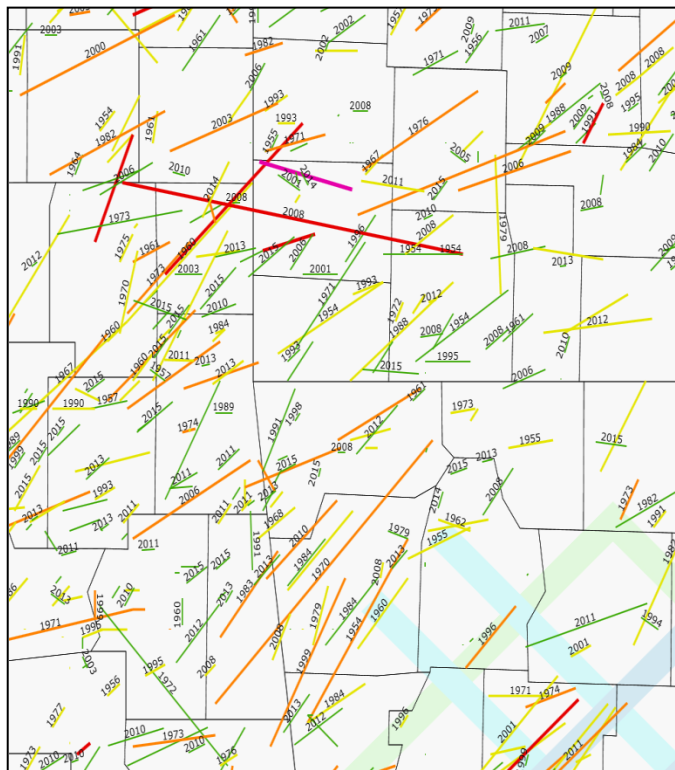
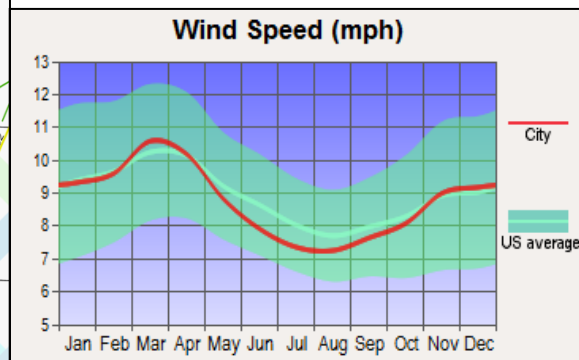


Figure 31: This map shows the path of all F2 and higher tornadoes in the past 50 years for NE Oklahoma, SW Missouri, and NW Arkansas. Red are the most severe.

### High Winds, Hail, and Tornado Potentials-

According to the National Oceanic and Atmospheric Administration's (NOAA) image to the left, Springdale has not had a confirmed tornado since 1970. However, tornadoes have touched down in surrounding communities almost annually and the city is located in the area designated as "Tornado Alley". Severe thunderstorms



with lightning and hail are a regular occurrence in this area. Winds associated with those storms can cause damage

throughout the city such as: down power lines, uproot trees, and damage homes. The last major wind event was in 2014; there was a derecho windstorm that uprooted trees and damaged roofs all over the city. Between April 19<sup>th</sup> and April 21<sup>st</sup>, 2011 there were hail and spiraling wind storms that caused major damage throughout the city.



Figure 32: This map shows that most of the heavy timber and forestland is south and east of Northwest Arkansas

**Agricultural/Urban Interface-**The department's agricultural/urban interface is spread throughout the city. Although there are not any areas that have heavy amounts or large expanses of timber that are traditionally seen in more remote areas, the potential for fires in the interface is still present. FMA 4 West and FMA 6 both have significant amounts of grassland and trees as well as parts of FMA 2. The northern part of FMA 3 has some areas of interface as well as the eastern portions of FMA 5. Most of the fuels are grasses and low lying brush and do not contain any ladder fuels. See Appendix K.

**Domestic Terrorism-** Although there have not been any major incidents, there is a potential for domestic terrorism in Springdale. Springdale has a significant amount of churches and assembly places along with Arvest Ballpark, which can hold 7,300 people or more during concerts. Tyson Foods Inc. and George's Inc. world headquarters are both located in the city, so there is always the potential for a radical animal rights group to carry out an attack. The Bikes, Blues, and BBQ motorcycle rally brings in over 400,000 riders to the area and the spring and fall craft fairs bring in large amounts of visitors from all over the country. The Walmart shareholder meeting brings thousands of employees, corporate executives, and shareholders from all over the world to Springdale and surrounding cities in Northwest Arkansas. These meetings can include registration, hotels, concerts, conferences and baseball games, which are held in Springdale. There are security concerns associated with outside organizations trying to disrupt these events. The hope is that a domestic terrorism incident will never occur, but the reality is the potential for an attack has to be addressed. The department has also taken steps to prepare for a school shooter/MCI scenario by training with Springdale Police Department and Springdale School District.



Figure 33: Arvest Ballpark hosts a variety of events from baseball games to concerts.

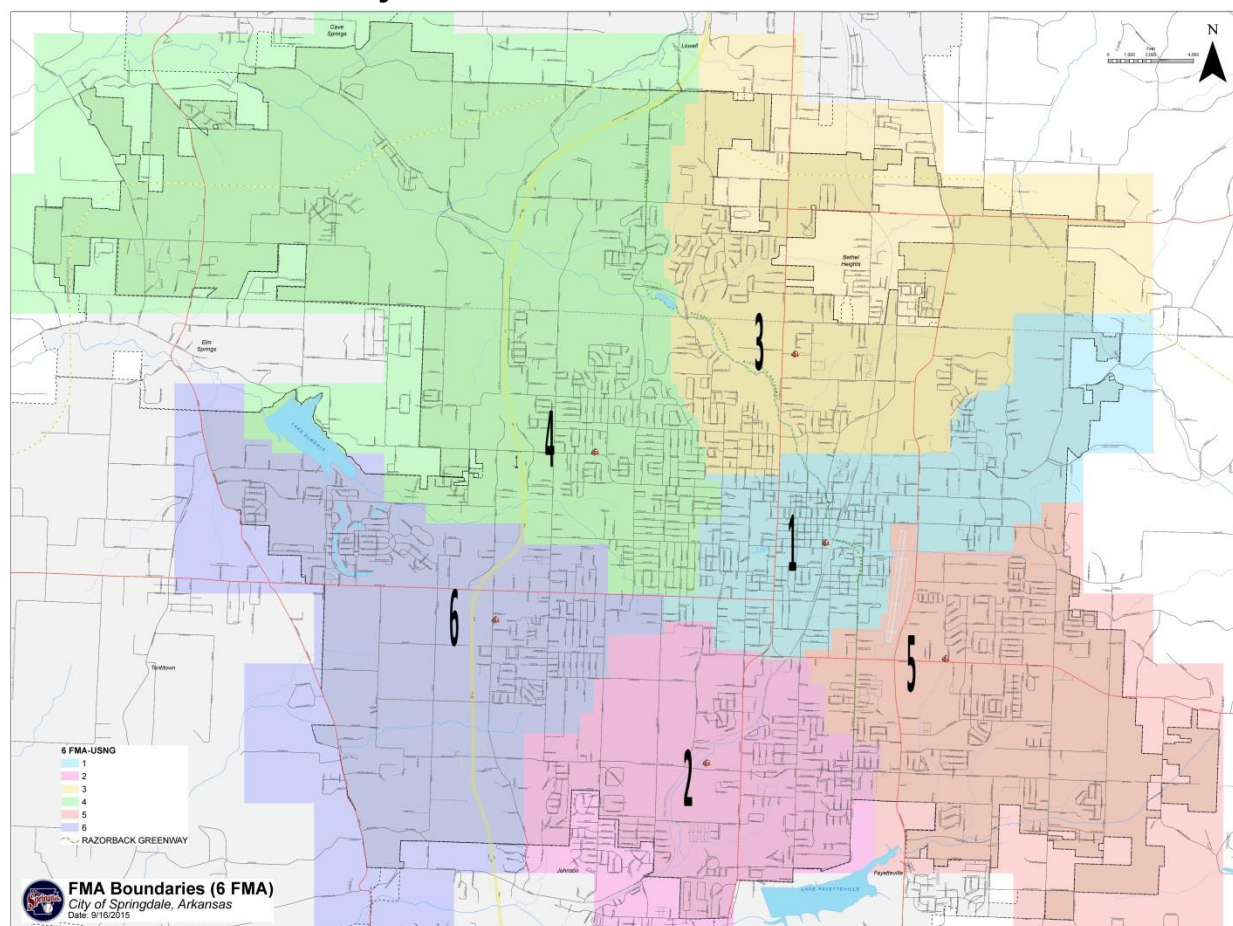
**Aircraft Emergency-** The department is responsible for covering The Springdale Municipal Airport's (KASG) aircraft emergencies. The airport has a single runway with a main terminal and control tower that is open from sun up to sun down. The airport averages approximately 171 flights per day, and it is mostly smaller local aircrafts. The airport resides on the boundary between FMA's one and five. However, due to the gate locations, Station 1 is the first due company. A standard alarm is dispatched to all airport emergencies including standbys. There have been infrequent crashes involving small planes in the past, but none have resulted in serious injuries or losses. One area of concern is the airport's close proximity to roadways and The Jones Center, Jones Elementary School, and Parsons Stadium. An incident involving one of the surrounding facilities would mean significant loss of life and be devastating to the community. SFD also provides mutual aid assistance to the Northwest Arkansas Regional Airport.



Figure 34: This airplane crashed into the field at The Jones Center for families in 2011. There were only minor injuries.



## Risk Assessments by FMA



The City of Springdale is divided into six different Fire Management Areas (FMA's). These areas were established to give the best response times throughout the city from the department's six fire stations. The following criteria were considered when the FMA boundaries were created: traffic flow, geographic considerations, as well as call volume and unit availability. In 2015 with the opening and relocations of the new stations 2 and 3, the FMA's were changed significantly from their original boundaries. Until there is enough call volume to properly assess the changes, the FMA's boundaries will be changing as needed to better fit the needs of the department and the citizens. Pictured above is the most recent FMA boundary map that was updated in August 2016. All of the target hazards and risks associated with each FMA are filed at Station 1 administration and are available upon request. These files are updated annually during risk assessment meetings.

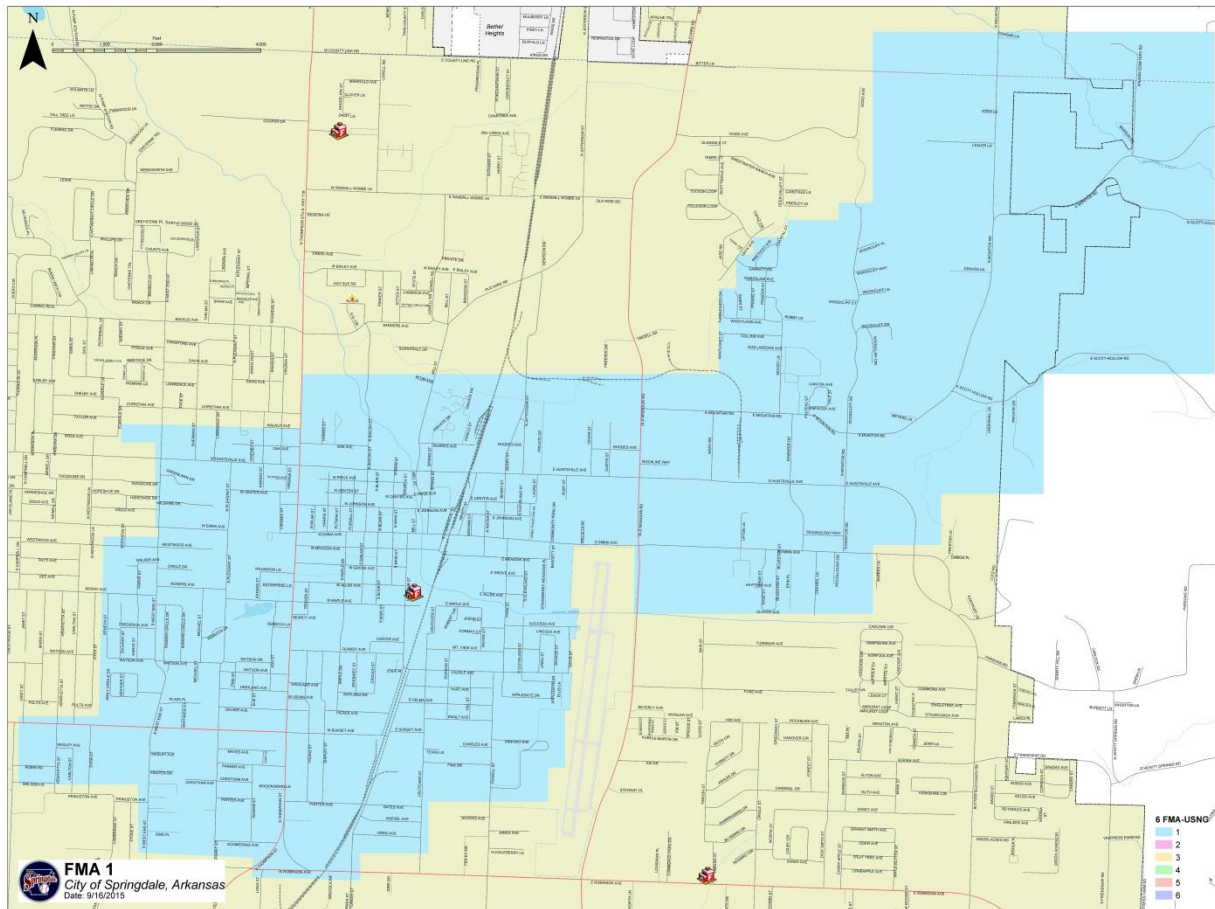
Call Totals by FMA 2015-2017				
FMA/Call Type	2015	2016	2017	Total
01	1700	1832	1868	3700
02	1168	1075	1189	3432
03	1120	994	1098	3212
04	1133	1168	1355	3656
05	1262	1178	1159	3599
06	1226	1211	1295	3732
Lowell City	433	10	0	443
Tontitown City	216	0	0	216
Johnson City	66	0	0	66
Fayetteville City	21	0	0	21
Knob Hill	403	0	0	403
Hickory Creek	105	0	0	105
<b>Totals</b>	<b>7153</b>	<b>7468</b>	<b>7964</b>	<b>22585</b>

This chart shows the different call types the department responded to between 2015 and 2017 broken down by the department's response area. Rescue/EMS calls are the majority of our calls, making up nearly 78% over the past three years. FMA 1 has had the highest amount of calls over the past three years due to the higher population density and lower income levels in the area. See Appendix A. Beginning in 2016, the department no longer provides EMS service beyond its city limits. The department is seeing a temporary reduction in call volume; however, it is anticipated that within 3 years the call volume will Meet or exceed 2015 totals.

Each FMA description that follows provides the following information: a brief description of the FMA location, the primary occupancies found in it, the routine fire associated risks, the major fire target hazards, the routine non fire risks, and the major target hazards for non-fire (EMS, HAZMAT, rescue) related incidents.



## FMA 1



**Description:** FMA 1 is located in the central part of the city and extends eastward towards the city limits. It shares major borders with FMA's three & five and smaller borders with FMA's four, two & six. This area is one of the most densely populated residential areas in the city and is one of the most densely populated commercial areas. This area also contains the city's historic downtown area, and many of the buildings in this area are older and may not be equipped with sufficient safety equipment. Portions of FMA 1 are undergoing a revitalization including Emma Avenue and the surrounding downtown area as well as parts of Thompson Street. FMA 1 also has a heavy mix of industrial, commercial, residential single and multi-family, and churches.

**Routine Fire Risks:** Residential structure fires in single-family dwellings and small room and contents fires in multi-family dwellings.

**Worst Fire Risks:**

1. AERT Inc. - This is a composite decking production facility that has an extensive history of fires throughout the plant. The extrusion process involves high heat, and fire is almost inevitable. Accessing the fire in the heavy industrial machinery at this plant can be very difficult. The location and severity of these fires vary with each incident from small collector fires to large dust explosions in the silos. The facility has made improvements to their systems to help prevent some of the fires. This facility is a large employer and a large-scale event would deplete many of the department's resources.

2. Emma Avenue/Downtown District- There is a lot of construction that is and will be taking place in this area due to the revitalization efforts.

Water-flow has been improved to the area but many of the buildings are in close proximity with no firebreaks and no sprinkler protection. Safe access to some of the buildings is a concern because there have been many remodels in these buildings over time which makes them very dangerous during firefighting efforts. The community impact of a large-scale fire would be devastating from a historical and financial perspective and the resources required would tax the department.



3. Northwest Medical Center- Although this is a sprinklered protected building; the impact of a large-scale fire at this facility would be devastating to the city from economic perspective based on revenue and job loss. Moreover, the lives lost impact could be enormous due to the inability to evacuate such a large building with many incapacitated



occupants. High-rise operations would also be very difficult in this building due to the building design remodels and surrounding structures. The department has responded to small fires at this facility, but any large-scale event would most likely require mutual aid as well as have the potential for a mass casualty incident.

4. City Hall/Police Department/Jail- These three facilities share one building that has firebreaks built into it but many of the fire prevention measures such as fire rated doors are not properly utilized. The Police Department and Jail facilities have been remodeled many times and create difficulties from an operations and prevention standpoint. If a fire were to occur here, it would cause problems on two fronts. City operations would be severely disrupted. Secondly, the potential for life loss is very high especially in the jail facility located within this building. Although the jail portion is sprinklered, non-combustible smoke infiltration from the other parts of the building is a real possibility. There is also a significant possibility of domestic terrorism due to the day-to-day City operations taking place in the building.



5. Paltec Enterprises, Inc. - This facility is a large pallet storage and assembly warehouse, with a heavy fire load of pallets and saw dust. A significant fire at this location would require relay pumping due to the water supply available and would be very dangerous to firefighters. Its close proximity to the airport could delay air traffic. There is a high possibility of an incident occurring at this facility.

6. Springdale Public Schools Administration Building- This building houses the Springdale School District's Administration Offices. There is a high fire load in this building with a basement area and sprinklers. A large-scale event at this facility would have a moderate impact on the department but school operations would be severely disrupted.



7. Arkansas Department of Corrections- This facility falls under the jurisdiction of the State Fire Marshal's office and is under the department of Corrections control. Access to this facility is very limited. It was originally a National Guard Armory, but has been remodeled to house state prisoners; therefore, it is under 24-hour lockdown and has the potential for high loss of life in a fire situation. A large-scale event would have moderate impact on the department but the probability of an occurrence is minimal.

8. Airgas- This is a large welding supply store that has large amounts of various HAZMAT gases stored on-site in a variety of different sized cylinders. The facility is in close proximity to residential neighborhoods and a multi-family apartment complex. A large-scale event would be devastating to that area.
9. Westwood Health and Rehab Nursing Home- This is a single-story sprinklered nursing home facility. If a large-scale event were to occur here would tax the department's available resources. An event here would also have the potential to be a mass casualty incident as evacuation would be very difficult because occupants are not able to self-extricate.
10. Jones Center for Families- This is a large multistory assembly type facility that is sprinklered. The facility has a school in it. It also has various activities such as an ice rink, meeting rooms, swimming area, and cafeteria. There can amount and location of people in the building varies from day to day. The building also has corridors that can confuse and disorient visitors and firefighters.
11. Arkansas Missouri Railroad- The railroad runs through the city, but the main offices and mechanics shops are located in FMA 1. The railroad can carry a variety of flammable contents such as oil and coal tankers. Railcars can also carry unknown amounts of various hazardous materials.
12. Kawneer- is one of the largest facilities in the city. It is also one of the largest employers in the city. The facility does aluminum milling and construction and has large amounts of metals on site. It also has various HAZMAT chemicals that are water reactive.
13. Ozark Sash and Door- Heavy fire load in this building with large amounts of wood materials stored. Building is very old and no sprinkler system.

**Routine Non-Fire Risks:** EMS Incidents

**Worst Non-Fire Risks:**

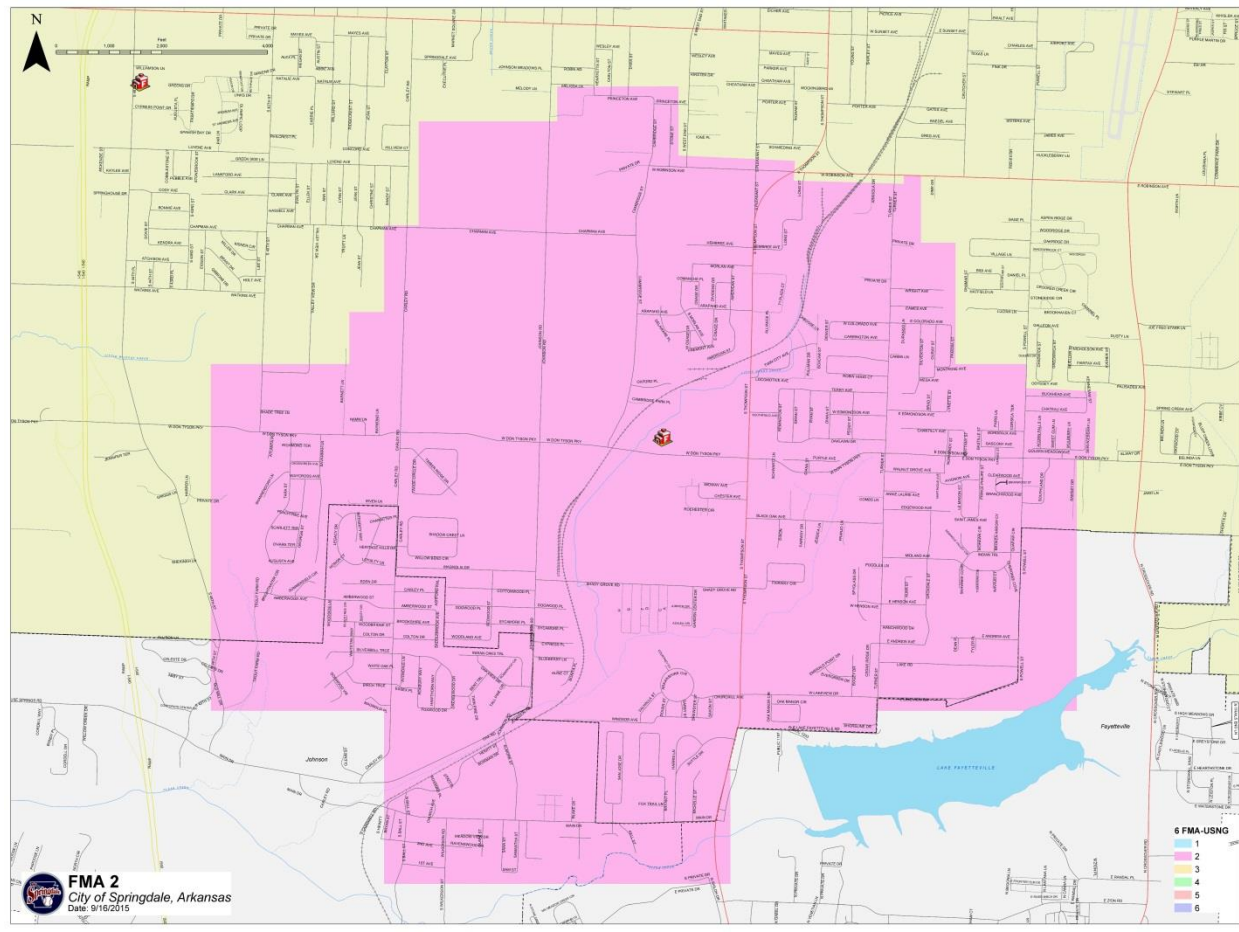
1. Freeze-N-Store- This is one of the largest cold storage facilities in the region. This facility uses a large amount of ammonia. There have been HAZ-MAT incidents at this location in the past.

2. Tyson Berry Street- This facility stores large amounts of ammonia and produces a significant amount of wastewater. On occasion, employees do confined space entry to different parts of this facility. Three years ago, there was a large-scale HAZ-MAT/mass casualty incident involving a mixture of chemicals used at this facility and mutual aid was required.
3. Spring Creek- This creek flows through the center of the city. During periods of high rain, Spring Creek will go from a small trickling stream to six to eight feet of rushing water. Although the water rarely runs out of the banks, the potential for swift-water rescue and/or drowning is possible during times of heavy rain because residential housing and the Razorback Greenway trail are in close proximity to the creek.
4. George's Feed Mill- This is a large height poultry feed production facility that has several different types of grain stored in grain bins. This facility has the potential for a high-angle rescue as well as a dust explosion. Any disruptions in production can have devastating effects on poultry production in the area.
5. Springdale Public Schools Bus Shop- This facility contains large fuel storage tanks with potential for a HAZMAT spill incident. An incident at this location could disrupt the school day for the entire city, and possibly have further economic and traffic impact.
6. Fuels & Supplies- This facility stores large amounts of fuel, and has a high potential for a HAZMAT incident. It is located on Emma Avenue near the downtown area and in close proximity to residential single and multifamily buildings. An incident could lead to mass evacuations, and would be taxing on the department's resources.

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**FMA 2**

**Description:** FMA 2 is located in the southern-most part of the city. It shares a southern border with the city limits of Johnson and Fayetteville. Carley Road is the main road that borders the western edge of this FMA; although, there are a few smaller streets and a subdivision that extend further west. The northern border is defined by Chapman Avenue, Princeton Avenue, and Robinson Avenue. The eastern border is defined by Pagosa Street, Serviceberry Street, Ramsey Street, and S. Powell Street. This FMA has the largest amount of commercial structures, as well as some of the largest square footage buildings in the city. There are churches, furniture warehouses, motels and single and multi-family dwellings in this FMA.

**Routine Fire Risks:** Residential structure fires in single-family dwellings and small room and contents fires in multi-family dwellings.

**Worst Fire Risks:**1. The Gardens at Arkanshire-

This building is a three story wood framed assisted living facility. The main building has one-elevator and two stairwells and houses occupants who could possibly have difficulty self-evacuating.



Any large-scale fire event would put a great strain on the department's resources due to evacuations and fire attack. This facility also has assisted living apartments surrounding the main building that could make accountability of the residents very difficult. Impact on the city would be great due to relocating displaced residents.

2. Tyson Foods World Headquarters- This is a large multi-building corporate facility located south of Chapman Avenue between Johnson Road and Cambridge Street. These facilities extend past Don Tyson Parkway to Shady Grove Road. There are three corporate office towers, a cooking/test kitchen, a laboratory with biological and chemical materials on-site, a maintenance office, a print shop, an information technology office, and a feed mill. There are several different potentials for fire, but due to the large number of personnel in these buildings, the potential for loss of life in a large-scale event could be high. This area also has high risk for other types of incidents such as EMS, Technical Rescue, and HAZMAT.



3. Cross Church/Shiloh Christian School-

This is the city's largest assembly/church facility, and it contains a large private school that is occupied almost every day. It has been steadily added onto to accommodate growth, which has resulted in some very confusing egress routes. The main worship hall is a large, open expanse with heavy fire load and the potential for collapse. On a typical Sunday, there are thousands of citizens in this building. The large crowds not only create a fire risk potential, but the potential for a domestic terrorism/mass casualty incident is also high.



4. Furniture Store & Warehouse District on S. Thompson Street- This area has several large furniture stores and warehouses in the area of S. Thompson Street between Chester Street and Shady Grove Road. These stores include Abide Furniture & Interiors, Ashley Furniture Home Store, and Furniture Row. These are large buildings, usually over 10,000 square feet that have a furniture showroom with furniture storage in the back of the buildings and in warehouses. These buildings have a very high fire load due to their contents. Most of the buildings are sprinklered. A large-scale incident here would likely be hazardous to firefighters, require additional personnel, and have an economic impact on the city.

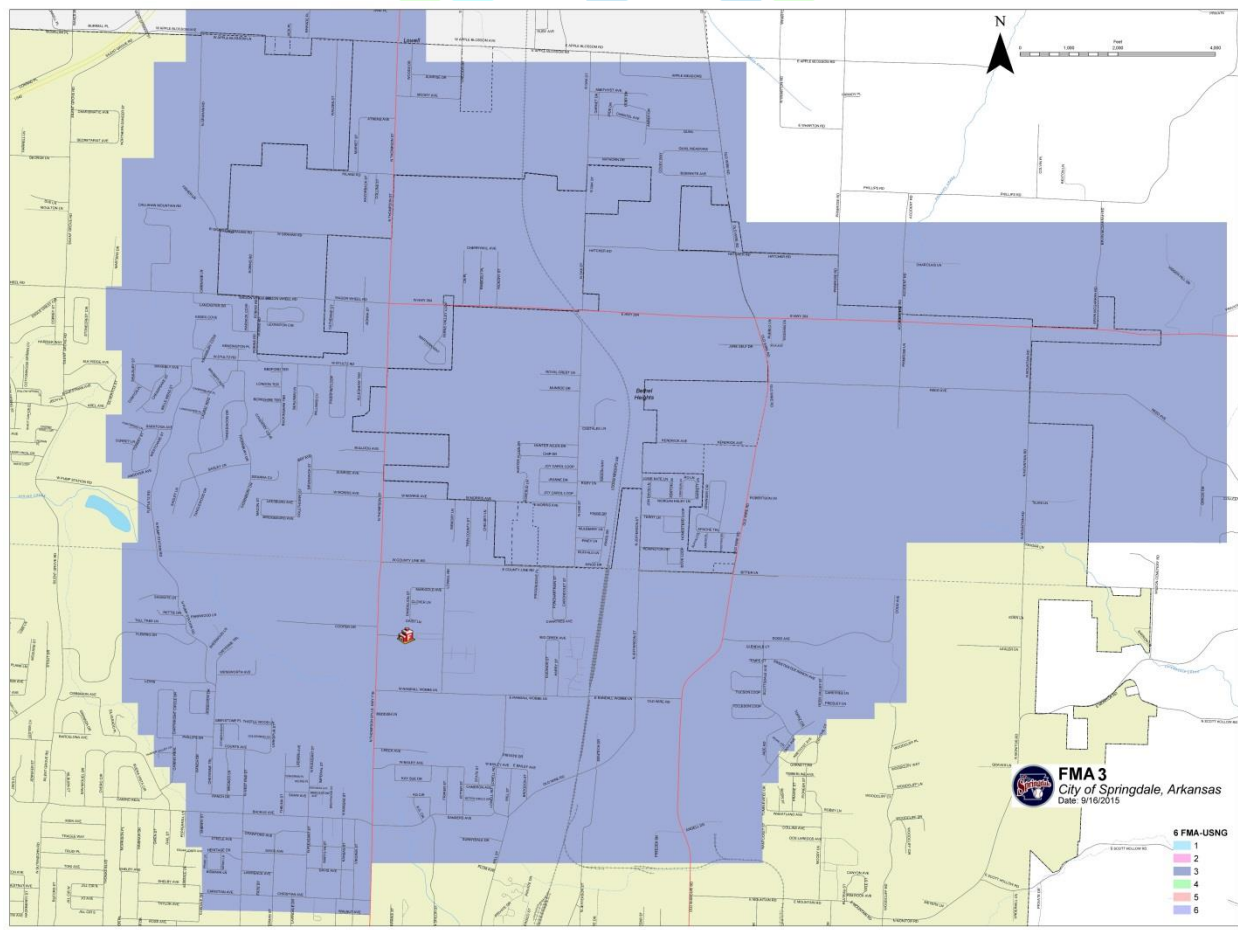
5. Walmart Supercenter- One of the largest employers and sales tax generators in the city. A large fire at this location would be devastating to the city. This is a sprinklered building, but if a fire occurred, there is significant fire load with unknown amounts of occupants.



**Routine Non-Fire Risks:** EMS Incidents

**Worst Non-Fire Risks:**

1. Tyson Foods Inc. Corporate Lab- This facility has large amounts of biological and chemical hazardous materials, which are used, on a daily basis.
2. Tyson Foods Feed Mill- This facility has the potential for a high angle rescue due to the heights of the grain towers. The large amounts of grain being moved and ground for feed also creates potential for a dust explosion.
3. Don Tyson Parkway from S. Thompson Street to Powell Street- the S. Thompson Street intersection is a high-speed intersection on an uphill grade with impeded visibility from all directions. The Turner Street intersection is just east of a shift in the roadway. This shift has led to several collisions, auto extrications, and fatality accidents. The city has decreased the speed limits through these intersections in an attempt to lower the amount and severity of collisions in these areas.

***FMA 3***



**Description:** FMA 3 is located in the northeastern part of the city. It shares a northern border with the city limits of Bethel Heights. It is the most industrialized FMA in the city. It contains several poultry production facilities and two large manufacturing facilities. This FMA has two large nursing home facilities and contains lower income and multi-family housing.

Due to the intersections of Wagon Wheel Rd, I-49, Hwy 71, and Hwy 264; there is a significant amount of Hazardous Materials transported through this area via large trucks. The railroad enters Springdale in this FMA, and has spurs at some of the city's commercial facilities that allows for loading and unloading of cargo. Home values in this area tend to be lower due to a high number of foreclosures and vacancies.

**Routine Fire Risks:** Residential structure fires in single-family and multifamily dwellings.

**Worst Fire Risks:**

1. **Shiloh Health and Rehab-**

This facility is a large nursing home facility with residents who cannot self-evacuate. It

is single-story and sprinklered with fire doors at each wing that have worked properly in past incidents. Evacuation during a large-scale incident would be very difficult on the department's resources.



2. **Windcrest Health and Rehab-** This facility is a large nursing home and assisted living with residents that cannot self-evacuate. It is single-story and sprinklered with fire doors at each wing that have worked properly in past incidents. Evacuation during a large-scale incident would be very difficult on the department's resources.

3. **LPS Inc. -** This is a used oil service company and used oil tank farm. This facility is not only a fire risk, but it also has a HAZMAT risk due to the large amount of used oil stored on-site. They collect, store, and ship, tens of thousands of gallons of used motor oil. The oil is transported in tank trailers, pumped into storage tanks on-site, and then trucked back out. This site is located in an industrial area, but it is in close proximity to residential areas. It is two blocks west of North Thompson Street so a fire at this location could cause traffic on major thoroughfares to slow or stop depending on the amount of smoke generated and the wind direction.

A fire here would also severely tax the department due to a lack of resources to properly fight this type of fire. The department does not have a sufficient stock of Class



B foam to fight a large Class B fire. The department would have to request supplies from other agencies or suppliers, which could cause a significant delay in operations until it, arrived on scene.

4. Ozark Armory- This building is a high volume retail store that sells new and used firearms, small arms ammunition, reloading supplies including smokeless powder and primers, and firearm accessories. The large amount of ammunition and reloading powder stored on-site would create a dangerous situation for firefighters if a fire occurred. This is a highly secured building with security bars on windows and doors that would delay operations and make for difficult emergency egress.
5. George's Inc. Gas Storage- This facility is a large propane storage yard that is located near other commercial facilities and the railroad tracks on E. Randall Wobbe Lane. This facility stores a large amount of propane in four large tanks and various numbers of semi-truck sized portable tanks. There are no residential homes located in close proximity.
6. Tire Trax Warehouse- Large amounts of tires are stored at this facility. This is a sprinklered facility. A fire could have significant environmental impact. Extinguishment would require significant resources.

**Routine Non-Fire Risks:** EMS Incidents

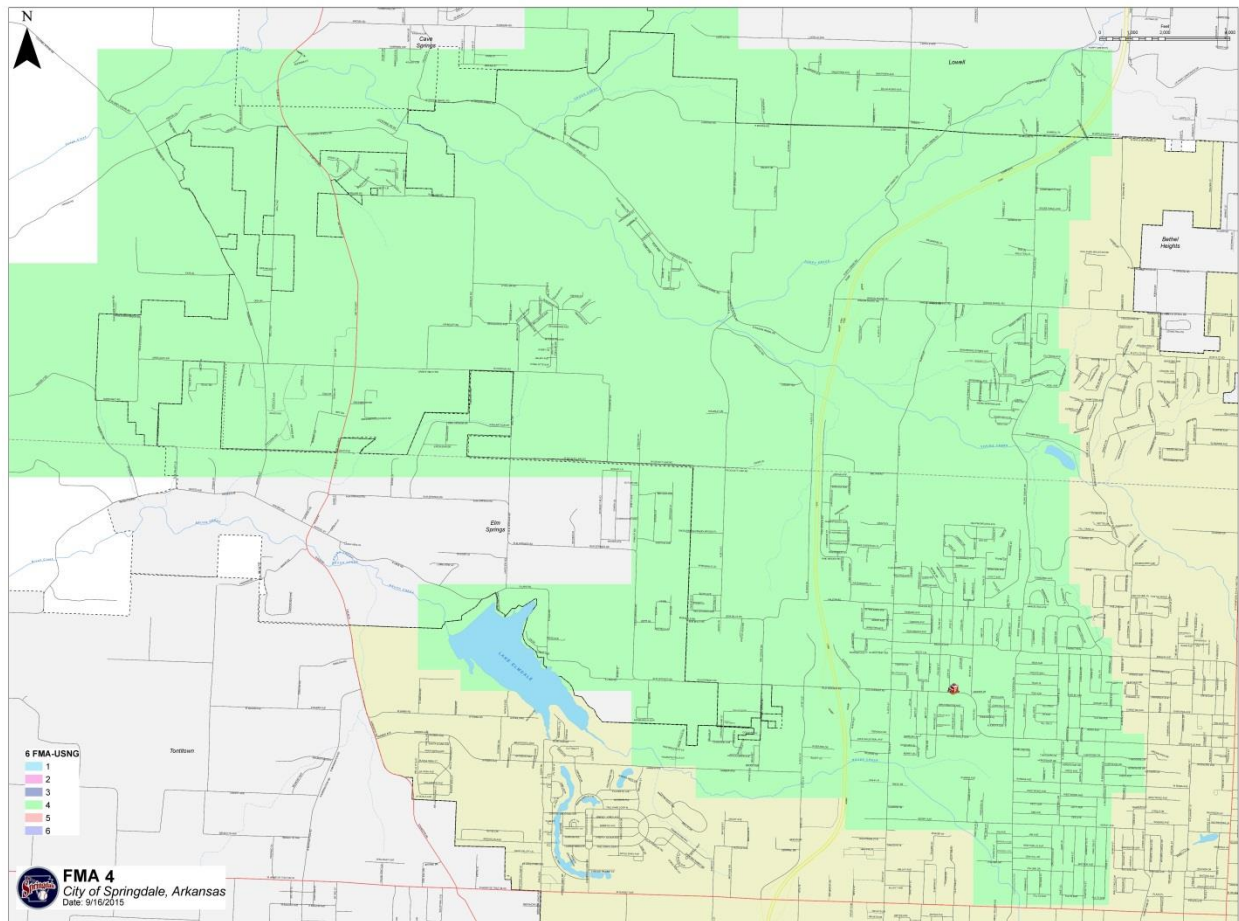
**Worst Non Fire Risks:**

1. Americold Logistics, LLC- This building is a cold storage facility that has a risk of having a HAZMAT incident due to large amounts of ammonia stored on-site and the potential for release.
2. Cargill Inc. Processing Plant/ Tyson Foods Cornish Plant/ George's Inc. Processing Plant- These three facilities are large poultry production plants and cold storage units that have the potential for HAZMAT & MCI. The HAZMAT risk is due to the large amount of ammonia, required for the cold storage, stored on-site as well as various other chemicals used for cleaning and maintenance. These facilities also produce large amounts of contaminated wastewater as a bi-product of their production process. The MCI risk is due to the large number of personnel who work at these facilities.



3. The City of Springdale Water Utilities Storage Facility- The city's water supply storage tanks are located within this FMA. There are five large tanks that provide all of the water supply for the city and have definite potentials for domestic terrorism and HAZMAT incidents.

## FMA 4



**Description:** FMA 4 is located in the northwestern portion of the city, and it is the largest FMA in the city in terms of square miles. When the city recently began annexing land west of I-49 most of it was designated as FMA 4. Although there is not a definitive line, the FMA is considered to have two parts. FMA 4 consists of the area east of I-49, and FMA 4 West is the area west of I-49. This FMA has a mix of mostly residential and agricultural. The area near Elm Springs Road, Wagon Wheel Road, and I-49 is beginning to experience a lot of commercial growth and that growth is expected to continue. In the next 3 to 4 years, the Highway 412 Bypass that runs through the northwest portion of this FMA will be completed and will increase traffic flow in more remote areas of the FMA.

**Routine Fire Risks:** Residential structure fires in single-family dwellings.

**Worst Fire Risks:**

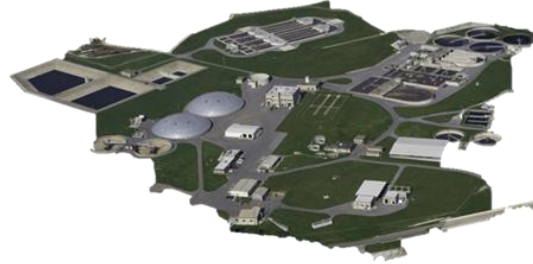
1. Welsco Inc.-This facility stores large amounts of welding supplies and gases. Large amounts of oxygen and acetylene tanks, of various sizes, are stored inside and outside this facility. There are no other buildings in the vicinity; however, I-49 is nearby.
2. Springdale Health and Rehab Inc. - This building is a large nursing home facility with residents who cannot self-evacuate. It is single-story and sprinklered with fire doors at each wing that have worked properly in past incidents. Evacuation during a large-scale incident would be very difficult on the department's resources.
3. Wood Spring Hotel- This facility is a four-story wood frame sprinklered hotel. Most of the residents are staying at this facility long term, and many have some type of hot plate cooking area in their room. The use of these appliances has led to several smoke alarm activations, and the residents do not evacuate when the alarm sounds. If an actual event were to ever take place, evacuation would be difficult and the potential for loss of life would be high in a large-scale event.
4. Walmart SuperCenter-This large retail facility is sprinklered throughout. It is considered a target hazard due to the various amounts of product that are in the building at any given time, the large number of people in the building, and the economic impact that a large scale event would have on The community.
5. Agricultural Areas and Urban Interface- FMA 4 West has a large amount of agricultural areas that interface with urban development. The city is expanding and there are several residential sub-divisions being built on tracts of farmland. These areas are still partially surrounded by fields and wooded areas and the potential for grass fires could be high. There are extended response times to most of these areas, and with correct weather conditions, a fire could spread rapidly.
6. Wingfoot Tire Shop- Large amounts of tires stored on site. This is a sprinklered facility.
7. Riggs CAT- This is a large construction equipment sales facility. Inventory value is large and there are several hazardous materials stored on site. This is a sprinklered facility. This facility is located in the northern most part of the city and could have a delayed response time.





**Routine Non-Fire Risks:** EMS Incidents**Worst Non Fire Risks:**1. Springdale Wastewater Treatment

Plant- This facility treats all of the city's sewer water. The facility is well secured and maintained, but there is potential for HAZMAT incidents that would cause environmental disasters, as this facility has direct contact with Spring Creek. There is a potential for confined space rescue in the containment areas that the facility staff and department members train on annually on confined space entry.



2. The Mountain Bike Park and The Razorback Greenway Trail- These areas are located just north of the Springdale wastewater treatment plant. Access to most parts of these trails is very difficult, so this makes patient access and extrication very difficult. This terrain could require some low angle rope rescue as well as use of the department's trail vehicle.

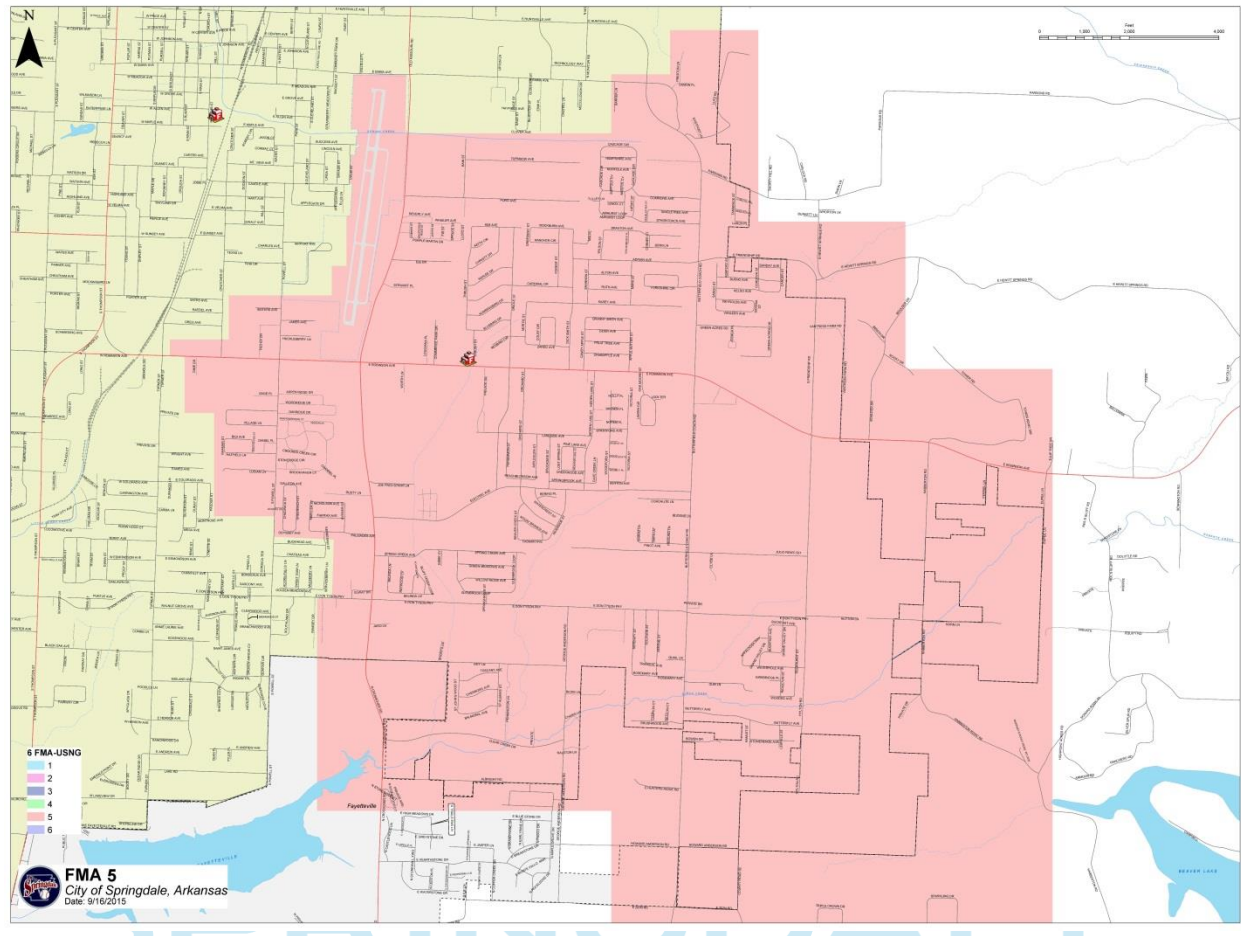


3. APAC-Central Inc. - This is a large stone quarry located in the northern portion of FMA 4. No explosives are kept on-site; however, explosives are transported to the site on days when they are blowing out a section of the mine. This is a heavy industrial area with the potential for explosive mishaps and industrial accidents. The department has responded to calls where automobiles go off the edge of the road at the Wagon Wheel Road exit off I-49, and they land on the top of the quarry's chat hills. These are difficult extrication scenarios.



4. Interstate 49 – The portion of I-49 from Wagon Wheel Rd. to Elm Springs Rd. has more accidents than any other location in the city. Road conditions deteriorate during wet weather. The road is now three lanes since construction completed in 2018.

## FMA 5



**Description:** FMA 5 is located in the southeast portion of the city. FMA 5 has several newer smaller residential homes and subdivisions. It also has a large amount of apartments and multi-family dwellings. The area has some large commercial warehouse storage facilities and many non-sprinkled commercial buildings. This FMA also has a variety churches, strip type shopping plazas, and nursing homes. FMA 5 is responsible for responding to the eastern portion of the airport as well. The eastern border of this FMA is defined by the Springdale city limits. Lutz Road, Eupeil Lane, and Vantress Farm Road are the three closest roads that make up the eastern boundary. It shares a southern border with the city limits of Fayetteville. The nearest roads that make up the southern border include Howard Anderson Road and Albright Road. Many smaller streets make up the western border. To the north, Spring Creek and part of East Emma Avenue are the dividing lines between FMA's five and three.

**Routine Fire Risks:** Residential structure fires in single-family dwellings and small room and contents fires in multi-family dwellings.

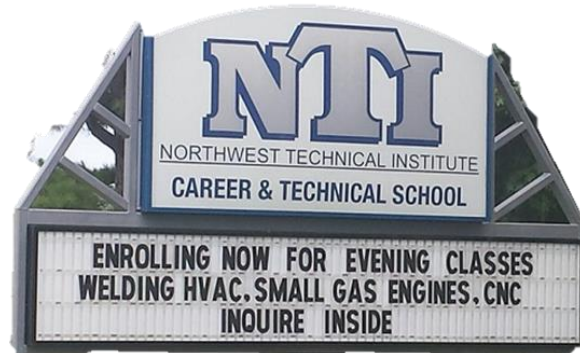
**Worst Fire Risks:**

1. Homestyle Assisted Living and Walnut Grove Nursing and Rehabilitation- These facilities are large nursing homes and assisted living centers with residents who cannot self-evacuate. They are both single story and sprinklered with fire doors at each wing that have worked properly in past incidents. Evacuation of these facilities during a large-scale incident would be very difficult on the department's resources.
2. Titan Propane- This is a large propane storage facility in close proximity to other buildings and Highway 412 East and Butterfield Coach Road. There are two large propane tanks and many smaller propane tanks stored in the back of this site, which is near a residential area.
3. Nilfisk-Advance Inc. Warehouse- This is a large production facility and commercial warehouse where commercial floor cleaners are assembled. Due to a heavy fire load and the size of this large building, the danger to firefighters is very high.
4. Springdale Civic Center- This building is a large assembly area that is often times at or above maximum capacity during special event weekends. Large and belligerent crowds have made evacuations difficult in past instances. If a large-scale event were to occur, the likelihood of loss of life is extremely high.
5. Airport Hangars- These are included due to the wide variety of items that may be housed in the hangars including planes and fuel.
6. Ozark Regional Transit – The largest fire (property loss) in department history occurred here in 2017. Numerous buses are stored here and the fire disrupted public transit for months afterwards.
7. Industrial Park – The industrial park area of the city has several large warehouses and industrial facilities that have a wide range of unknown materials and fire load. Several facilities also pose a large HAZMAT risk.



**Routine Non-Fire Risks:** EMS incidents**Worst Non-Fire Risks:**

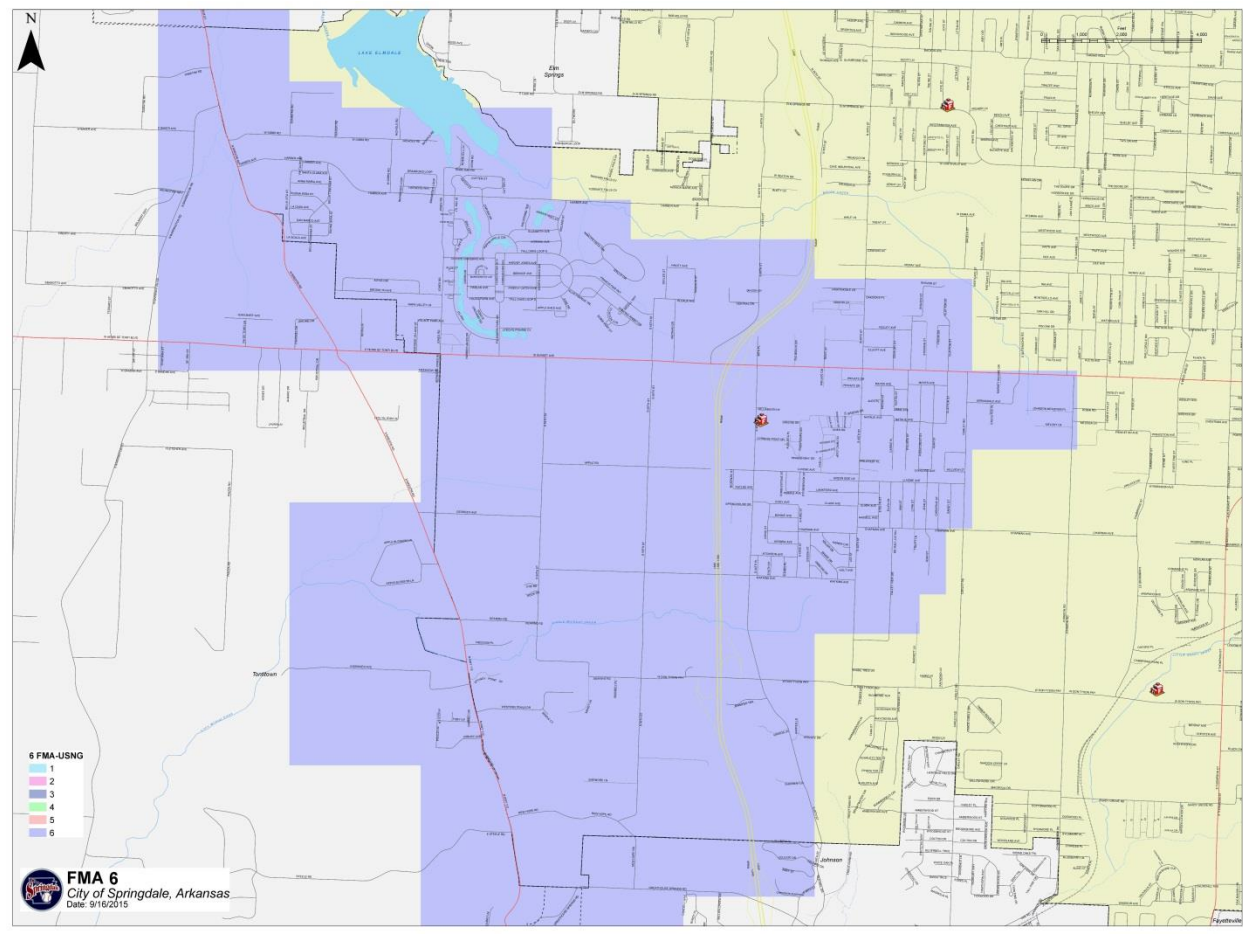
1. Northwest Technical Institute- This is a large multi-building educational campus. The ammonia technology center stores large amounts of ammonia refrigerant, which has the potential for release. The potential for injuries could be very high given the large number of students on campus.
2. Pratt and Whitney- This is a large production facility that produces aircraft engines. It has the potential for a confined space rescue as well as an industrial machinery rescue.
3. Plumtronix Manufacturing- This is a manufacturing facility that produces electronics and equipment. There is a high danger to firefighters due to the production equipment and materials used in this facility. This building displays a NFPA 704 placard with the do not use water symbol because of the molten solder used at this facility.
4. Research Laboratories- This FMA has high security research laboratories that contain chemical and biological hazards that the department is aware of.



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## FMA 6



**Description:** FMA 6 is located in the southwest portion of the city. The major border along the western side is Maestri Road (Hwy 112). Along the south, it is bordered by Great House Springs Road. To the north, Gibbs Road and Har-Ber Avenue are the two roads dividing FMA's 6 and 4. The eastern border of FMA 6 is made up of several different streets due to the proximity of fire stations 2 and 4. Those streets include Clayton Street, Johnson Road, Carley Road, 40<sup>th</sup> Street, and 48<sup>th</sup> Street depending on how far south you are in FMA 6. The FMA has some of the newest construction in the city and includes an almost even mix of residential construction, large hotels and commercial buildings, and open agricultural areas. Much of the agricultural area is being slated for commercial development, and an overlay district has been created to monitor changes and improvements.

**Routine Fire Risks:** Residential structure fires in single-family dwellings.



**Worst Fire Risks:**

1. Arkansas Children's Hospital Northwest- Newly constructed children's hospital. This is a multi-storied sprinklered facility. This facility can house numerous amounts of patients that may or may not be mobile. Evacuation would require numerous resources. The impact on the entire region would be significant since this is the only specialized children's facility within three hours of Springdale. There is also the potential for domestic terrorism at this site.
2. Chandler Equipment – Single story industrial facility. Large amounts of flammable gases are stored on site at this fabrication facility. There are also other metal related hazardous materials. The department has had a fire in the facility that was controlled by the sprinkler system.
3. Circle of Life Hospice- This is large nursing/hospice facility. All patients are in the last stages of life and most are bed-ridden. Evacuations during a large-scale incident would be very difficult on the department's resources because of the unknown amount of visitors at any given time and the large number of office and nursing staff on-site.
4. The Maples at Har-Ber Meadows and Morningside of Springdale- These facilities are large nursing home facilities with residents who cannot self-evacuate. They are both single-story and sprinklered with fire doors at each wing that have worked properly in past instances. Evacuation of these facilities during a large-scale incident would be very difficult on the department's resources.
5. WinField Solutions- This building contains numerous hazardous materials. Several of those hazardous materials are water reactive; therefore, a NFPA 704 placard is displayed on the building. A fire or incident here would not only be hazardous to on-scene personnel, but it could be hazardous to nearby commercial properties and residential neighborhoods.
6. Large multi-story hotels- This FMA contains numerous large multi-story hotels that could pose an evacuation risk in the case of large-scale event. Each hotel has its own special hazards, which would need to be addressed on case-by-case basis. Much of this has been done in pre-planning.

**Routine Non-Fire Risks:** EMS Incidents

**Worst Non Fire Risks:**

1. Winfield Solutions- In addition to the fire risk mentioned above, this facility would pose large HAZMAT risk due to all of the chemicals stored on-site.
2. Arvest Ballpark- This is a Minor League Baseball stadium and a large assembly-gathering place that can hold nearly 7,300 people. There have been sold out baseball games, concerts, and large events such as Race for the Cure and the Bikes, Blues and BBQ motorcycle rally held in this stadium. The potential for large-scale mass casualty type events are very high.



3. Hotels, Har-Ber High School, and Har-Ber Wildcat Stadium- All of these locations have the potential for an elevator technical rescue. Incidents have occurred at these locations and have required technical rescue but no injuries have been involved.



4. I-49 and Highway 412 intersection- This is one of the busiest intersections in the region, and it has a high potential for accidents requiring extrication. This area includes Highway 412 between 40th Street and Jones Road. There are high traffic volumes during rush hours and heavy amounts of semi-truck traffic due to the Pilot Truck-Stop in this area. Accidents are frequent and slow traffic can cause major back-ups.

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**Target Hazards by FMA**

<b>Top Target Hazards by FMA</b>			
<b>FMA</b>	<b>Name and Address</b>		<b>Risk</b>
1	Razorback Greenway/Downtown Area	Throughout City/Emma Ave	High/Special
1	Springdale City Jail	201 Spring Street	High/Special
1	Frez-N-Stor Inc.	601 Porter Ave	High/Special
1	Fuels and Supplies	617 East Emma Ave	High/Special
1	Leader Roll/ Annex Frez-N-Stor Inc.	200 Porter Ave	High/Special
1	Springdale Airport	802 Airport Way	High/Special
1	Parsons Arena	1499 E Emma Ave	High/Special
1	Springdale Schools Bus Shop	1646 E Emma Ave	High/Special
1	Arkansas Dept. Of Corrections	600 W. Sunset	High/Special
2	Airgas	1404 S. Pleasant	High/Special
2	Tyson Corporate Lab	3609 Johnson Rd	High/Special
3	City Water Storage Tanks	Old Missouri Road	High/Special
3	Thompson Ave and Wagon Wheel Rd HAZMAT Travel		High/Special
3	Propane Farm Located at Old Wire Road and Railroad Tracks	Old Wire Rd and Railroad Tracks	High/Special
3	LPS Inc., Used Oil Service Company	4387 Catherine St	High/Special
3	Used Oil Service Tank Farm	400 Catherine St	High/Special
4	APAC Central Concrete Quarry	13561 Puppy Creek Ave	High/Special
4	Mountain Bike Park	Pump Station Rd	High/Special
4	City of Springdale Water Treatment Facility	2910 Silent Grove Rd	High/Special
4	Welsco Inc.	4266 Conestoga	High/Special
5	NTI ammonia Technology Center	604 Bain	High/Special
5	JV Manufacturing and Paint Shop	803 Butterfield Coach Rd	High/Special
5	Titan Propane	3151 E Robinson	High/Special
6	Winfield Chemical Supply	583 Skyler	High/Special
6	Sherwin Williams Paints	3115 W Sunset Ave	High/Special
6	Arvest Ballpark	3000 S 56 <sup>th</sup>	High/Special

(Table continued on the next page)

FMA	Name and Address		Risk
1	UPS Fuel Island	2739 E Huntsville Ave	Maximum
1	AERT Production Facility	802 E Huntsville Ave	Maximum
1	Downtown Emma Ave Fire District	Emma Ave	Maximum
1	Northwest Medical Center	601 W Maple	Maximum
1	Tyson Berry Street Plant	600 Berry Street	Maximum
1	Ozark Sash and Door	216 W Robinson Ave	Maximum
1	Westwood Health and Rehab	802 S West End	Maximum
1	Freeze N Stor	Sunset Avenue	Maximum
2	Cargill Feed Mill	2201 Long Street	Maximum
2	Cross Church/Shiloh Christian School	1709 Johnson Rd	Maximum
2	Gardens @ Arkanshire	5000 Arkanshire	Maximum
2	Tyson Feed Mill	3801 Johnson Rd	Maximum
3	Apex Tool/Imperial(vacant 7/2016)	1609 N Old Missouri Rd	Maximum
3	Moore's Retread(out of business 7/2016)	606 W Randall Wobbe Ln	Maximum
3	Shiloh Health and Rehab	1092 W Stultz Rd	Maximum
3	Windcrest Health and Rehab	2455 Lowell Rd	Maximum
4	Springdale Health and Rehab	102 N Gutensohn	Maximum
5	Homestyle Assisted Living	2175 Orchard	Maximum
5	Walnut Grove Nursing Center	1393 E Don Tyson Pkwy	Maximum
6	Circle of Life Hospice	901 Jones Rd	Maximum
6	Maples @ Harber Meadows Nursing Home	6456 Lynch's Prairie Cove	Maximum
6	Morningside of Springdale Assisted Living	672 Jones Rd	Maximum

Table 15: Top Target Hazards listed by Risk Level and FMA

The department also has 164 high-risk commercial facilities and 989 moderate/ low risk commercial facilities within its jurisdiction. Most of the residential structures in the city are moderate to high-risk one and two story homes as well as multi-family residential apartments. This is displayed in the zoning map in Appendix B.

Through the risk assessment process, the department has been able to identify new risks to the city and the department, as well as confirm and classify older known risks. This will allow us to better plan for future incidents and growth in new areas. Moving forward the department will re-evaluate its methods of classification and classify all new occupancies based on the risk assessment guidelines. The SFD would like to follow the model of the Vision 20/20 community risk assessment. This will allow SFD to send the proper amount of units and labor to appropriately handle an incident.



## Current Deployments and Performance

### *Community Expectations and Performance Goals*

The department's goal is to meet the expectations of the citizens of Springdale by ensuring that the department is a good steward of The Citizen's tax dollars that have been entrusted to the department. During the strategic planning process, Springdale citizens from various backgrounds were surveyed. Both internal and external customers came to a consensus on the following priority of service programs and expectations of performance:

Programs	Ranking
EMS (Ambulance Service) (Advanced Life Support)	1
Fire Suppression	2
Technical Rescue	3
Training and Development	4
Public Education	5
HAZMAT Response	6
Fire Prevention	7
Repair and Maintenance	8
Communications Operations	9
Labor and Human Relations	10

Table 16: SFD Programs Ranked by Importance to Community Members

Response Time Category	Total Time
Call Processing Time	60 seconds
Turnout Time	90 seconds
Travel Time	4 min and 20 sec
Total Time First Unit on Scene	6 min and 50 sec
Total Time to Establish Effective Firefighting Force (EFF) for a Moderate Risk Fire	8 min and 10 sec

Table 17: Incident Response Time Expectations by Community Members

These goals set forth by the citizens for "effective firefighting force" and response times will be used as the benchmark times for fire, EMS, rescue, and HAZMAT responses within the city. The department will re-evaluate its effective response forces (ERF) for incidents needed to ensure that an appropriate ERF responds to incidents based on the level of risk associated. The department will also evaluate the response times associated with those incidents to identify areas of improvement and create a realistic image of current times. One goal of this edition of the Risk Assessment/ Standards of Cover is to identify the deficiencies in data collection and to improve data collection and methods. This will allow Department members to appropriately classify data collected so the department will be able to utilize it more effectively.

## Urban Vs. Rural

Due to recent annexations and rapid growth of the city's borders and the department's jurisdiction, response times can be divided into two separate categories. Those categories are urban and rural. "The Census Bureau's urban-rural classification is fundamentally a delineation of geographical areas, identifying both individual urban areas and the rural areas of the nation. The Census Bureau's urban areas represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses. For the 2010 Census, an urban area will comprise a densely settled core of census tracts and/or census blocks that meet minimum population density requirements, along with adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory with the densely settled core. To qualify as an urban area, the territory identified according to criteria must encompass at least 2,500 people, at least 1,500 of which reside outside institutional group quarters.

The Census Bureau identifies two types of urban areas:

- Urbanized Areas (UA's) of 50,000 or more people
- Urban Clusters (UC's) of at least 2,500 and less than 50,000 people.

"Rural" encompasses all population, housing, and territory not included within an urban area.

The specific criteria used to define urban areas for the 2010 Census were published in the Federal Register of August 24, 2011."- US Census Bureau Website Information.

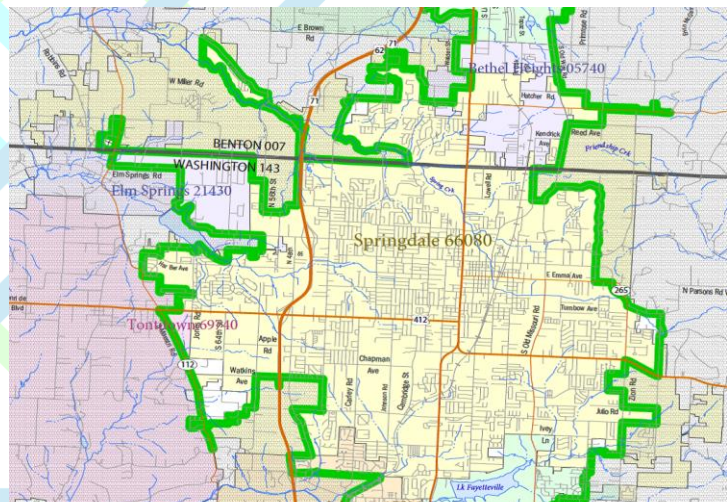


Figure 35: Map of Urban/Rural Areas of the NWA Metro area. US Census 2010.

The department utilized the US Census Bureau map of Urban and Rural areas to determine which addresses are located outside of the urban response area. The rural area makes up a small portion of the department's total jurisdiction as you can see on the map to the right. The area within the green border of the map is the urban area of The City of Springdale and is a concentrated area of over 50,000 Citizens. The rural area of Springdale, which is outside of the green border, accounts for less than 5 square miles of the city's 47.25 total square miles. However, these rural areas are growing rapidly as new homes are being constructed and major roadway projects are being completed. The department does not expect this area to be considered rural during the next census. The department has chosen to identify all areas of the city as urban. There are two reasons behind this.

1. All citizens expect the same level of service throughout the city, and expected this when annexed into the city
2. Anticipated growth to these areas will make them urban sooner than later.

## Importance of Response Time Analysis

Scientific data shows fires in modern homes burn hotter and faster than in older construction homes, so response times are extremely important to the effectiveness of today's fire department. That scientific data was compiled by The National Institute of Standards and Technology (NIST), The International Association of Firefighters (IAFF), and other credible sources. With a large amount of new construction homes in the area, revitalization efforts, as well as remodeling a large amount of older homes; one has to assume that newer construction materials are being used more frequently and that the fires are going to be burning at an accelerated rate making response times vitally important.

The following pictures illustrate the stages of fire and the time it takes for a fire to grow from a smoldering state to a full flashover, which dramatically decreases the chances of survival for an occupant and increases the chance of firefighter injury.

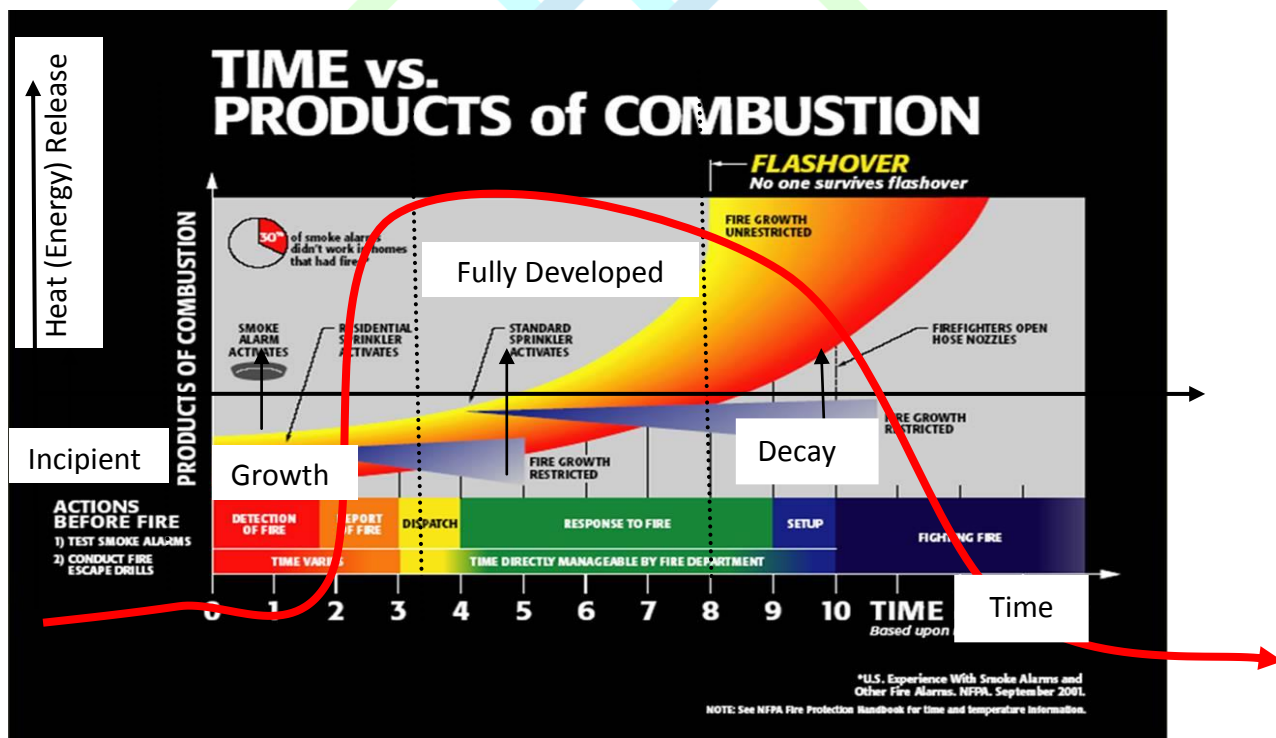


Figure 36: This image shows the estimated times for normal fire growth until flashover. It is important that units arrive on scene and begin firefighting operations prior to flashover to help prevent loss of life and property; as well as for firefighter safety.

As fires pass their free burning stage, firefighters have between four and ten minutes, dependent on the conditions, to be actively engaging in fire suppression. This allows the best opportunity to prevent flashover, which can increase life and property loss. Fires that have reached the flashover point will:

- Decrease survivability rates
- Spread faster
- Take larger hoselines and more water which can increase fatigue amongst firefighters
- Interfere with search and rescue efforts
- Require more personnel to mitigate.
- Increase potential for injury to firefighters

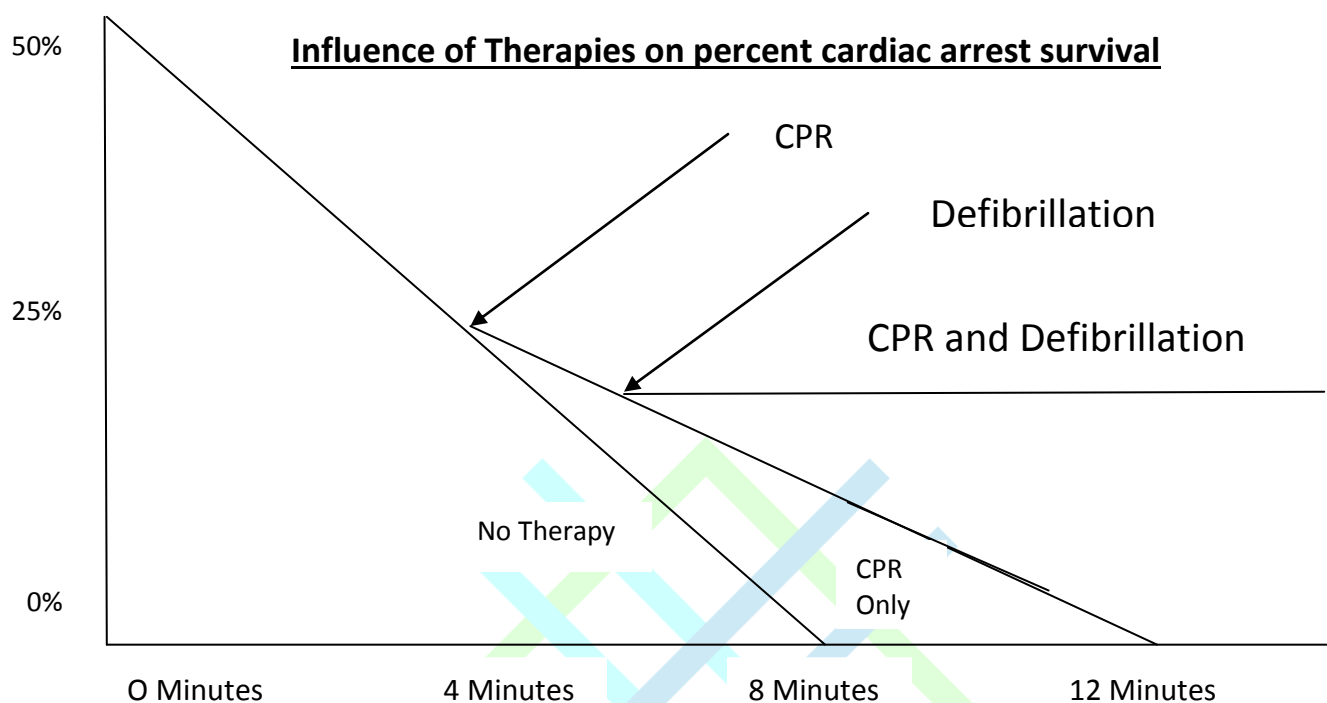
The Springdale Fire Department's benchmark goal is to have sufficient equipment and personnel, who are capable of mitigating the fire, on scene in 6 minutes and 50 seconds to help prevent the occurrence of flashover. This is why proper station and unit placement is so important in ensuring the best possible service is delivered to the citizens of Springdale in a timely manner.

EMS response times are similar to the times for an effective fire response. The probability of survival greatly diminishes as response times reach the eight to ten minute mark. As you can see in the following chart, from a 1998 study of The Emergency Medical Directors' Association of California, times of initiating CPR and defibrillation are critical in increasing survivability in patients. The likelihood of survival decreases every minute that a person is in cardiac arrest and the chances of successful outcomes are not historically high. However, the city and the department are morally obligated to provide efficient and proper services to meet the expectations of the citizens and to prevent the hidden costs of litigation and political upheaval.

Collapse to CPR	Collapse to Defibrillation	Probability of Survival
≤5 minutes	≤10 minutes	37%
≤5 minutes	>10minutes	7%
>5 minutes	≤10 minutes	20%
>5 minutes	>10 minutes	0%

Figure 37: Probability of survival during a cardiac arrest incident based on 1998 EMDAC study.





Detection of Collapse	Report of Alarm 911 or direct	EMS Fire Response Time			
		Dispatch Units	Turn Out Time	Response Time	Set Up on scene
Time Varies	Time Directly Manageable by Bystanders or Personnel				

Figure 38: As length of time to initial treatment increases, chances of survival are dramatically decreased. That is why fast response times are so important.

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Many pieces go into the total time it takes from the start of an incident until aid arrives on scene and begins mitigation of the incident. These pieces make up the "Cascade of Events" and are diagramed and listed below:

1. **Event Initiation**- From a state of normalcy, factors combine that result in the initiation of the emergency response system. These factors can be fire or EMS related, and can be seconds, minutes, hours, or even days before initiation occurs. An example would be a patient ignoring chest pain/discomfort for days until it becomes unbearable and then they call 911. At that point, significant damage has already been done and emergency crews are at a disadvantage, which makes every second of their response even more important to the patient's outcome.

2. **Alarm Transfer Time-** The time it takes for a 911 call to be transferred from another emergency dispatch center, such as county or state police, to the department's dispatch center. This does not happen on all incidents. However, when it does, there is an increase in the total response time. Alarm transfers can be attributed to the location of cell phone towers in relation to where the caller is calling from, the caller is away from the incident, or various other causes.

3. **Alarm Answering Time-** The time it takes for an incoming call to be answered at the dispatch center.

4. **Alarm Processing Time-**

The time it takes for a dispatcher to process caller information, determine the proper units to dispatch, and alert the proper units via audible or visual annunciation or both. The alarm processing time ends at the start of turnout time. Proper staffing and training of dispatchers is vital to improving alarm processing times. The goal is to have the alarm processed and to the correct station alerted in under 60 seconds. Springdale Dispatchers can provide the stations with an alert notification tone at any point in the incident, but those tones can be delayed with the usage of the Emergency Medical Dispatch (EMD) and Emergency Fire Dispatch (EFD) systems. Dispatchers have been working to get the alert tones and the initial assignment to the crews as fast as possible. They have started dispatching the crews before entering into the EMD and EFD questions.

5. **Turnout Time-** The time between the unit notification of the emergency and when the unit is manned. This includes emergency personnel donning the proper personal protective equipment (PPE) and boarding and starting the apparatus. Turnout time stops at the start of travel time to the incident. Turnout time is where personnel can have the biggest impact on response times by training in donning PPE and being prompt to their units. The department is working to meet its 90-second turnout time goal. Stations receive their alert tone via radio and shortly thereafter, the initial dispatch

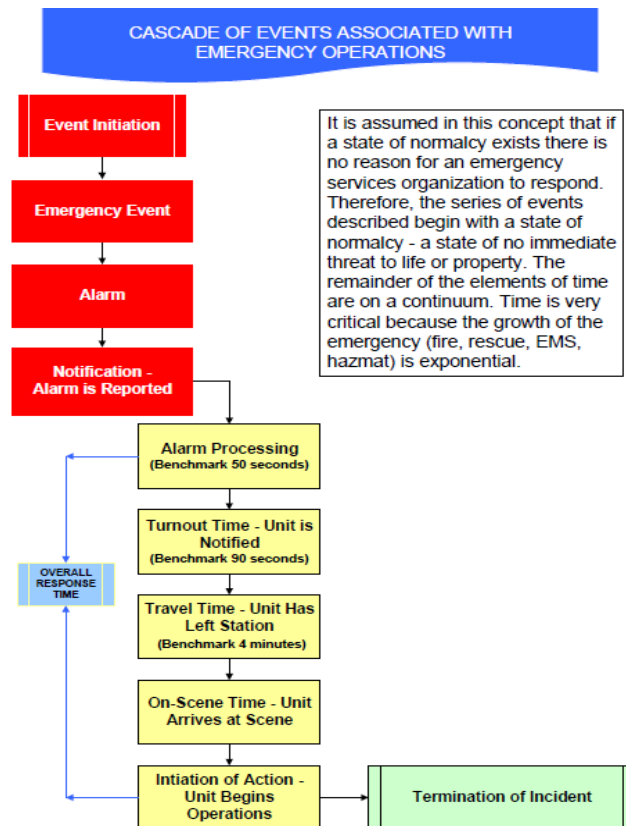


Figure 39: This flow chart shows the entire cascade of events from incident occurrence to termination of the incident. The yellow events can be directly affected by the city and the department. Those events make up the overall response time that SFD measures.

assignment is given. The SFD has worked with Springdale Communications Center to ensure that stations receive alert tones prior to EMS/EFD questions being asked. This assists with faster turnout. Dependent on the type of call, crews respond with or without lights and sirens. After the EMD/EFD questions are answered, crews are provided with a determinant code that advises them what response mode is appropriate for the situation. The crews can maintain, upgrade, or downgrade their response mode based on the determinate code. SFD also installed "shot clocks" in all stations in 2018 to improve crew turnout times. They have been well received.

6. **Distribution Travel Time**- The time from when the first unit begins response to the incident until the first unit arrives on the scene. This time can be increased or decreased depending on traffic flows, incident locations, time of day, and road conditions. It is very difficult for department members to improve travel time without risking injury to themselves or citizens. The department must work with the city and other entities to provide the information needed to meet its goals of 4 minutes and 20 seconds travel time for the first unit to arrive on scene for incidents that fall within the urban parts of the city. The department has established rules for which units are considered appropriate to measure first unit on scene times so that a unit that is capable of initiating mitigation of the incident is the one that is measured. Those units are as follows:
  - Fire Incidents- The first arriving unit will be an Engine or Ladder unit capable of supplying water for hoselines or initiating rescue, if needed.
  - EMS Incidents- The first arriving unit will be an Engine, Ladder or Ambulance that is capable of initiating BLS or ALS care.
  - HAZMAT Incidents- The first arriving unit will be an Engine or Ladder unit capable of sizing up an incident and determining if additional resources are required. This unit should also be able to initiate operations and rescue.
  - Rescue Incidents- The first arriving unit will be an Engine or Ladder unit capable of sizing up an incident and determining if additional resources are required. This unit should also be able to initiate operations and rescue.
7. **Concentration Travel Time**- The time from when additional units go responding to an incident until all units arrive on scene to make an effective response force for an incident. Until beginning the accreditation process, the department did not evaluate Effective Response Force (ERF) times. The department has developed processes that will track and improve ERF times in the future.

Any of the above times can be affected by a variety of human processes that can allow for error. Dispatchers have to manually enter times into the CAD system, and if there are multiple calls or a high stress incident, those entries may be delayed. Firefighters and dispatchers have to verbally announce and acknowledge their status (responding, on scene, in service) over the radio and if there are multiple units talking on the radio at the same time, traffic may be missed. Units are now equipped with Active911 that provides crews with directions to an incident. However, with new development and streets that share the same names, it is

possible for units to have to rely on paper maps to find the location of an incident thus delaying response times.

All of these factors make up the Total Response Time (TRT) for the first unit on scene as well as for an effective response force for an incident. The Effective Response Force (ERF) is the amount of units and personnel required to mitigate an incident based on the critical tasks that must be performed. Some of these factors can be impacted by emergency personnel and have a known start and stop time such as alarm answering time, turnout time, and travel time. Some factors, such as discovery of the event and event initiation, are out of the hands of emergency responders and could be unknown to responders. This is why it is so critical that the department and the city do everything within its power to help reduce times wherever possible. If financial and/or personnel limitations are preventing improvement in areas which can be impacted, the city and the department must determine if the benefits will outweigh the costs.

### ***Critical Task Capability of the Department***

Units in the department are dispatched based on the type of incident, and each incident has a set alarm assignment. Each incident type in the Computer Aided Dispatch (CAD) system is assigned an alarm assignment of either still, special, or standard. If additional work force is needed, these alarm assignments can be upgraded to a second, third, or fourth alarm by the incident commander or the first due. The table on the next page shows the entire department's alarms assignments it currently utilizes. Please refer to SFD policy 501.1 (Standard Alarms) in Appendix F for a complete list of call types and unicodes, incident descriptions, and the amount and type of units to be dispatched on the initial alarm. Standard and still alarms are dispatched based on the information provided to the dispatch center prior to alerting SFD resources.

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Alarm Terminology	Units and Staff Assigned	Resources
<b>Still Alarm</b>	<b>Single Companies</b> (Closest Fire Company, Medic, Brush or any combination of these); <b>Mutual Aid Fire Response</b> – Closest Fire Company or Requested Resource Type & Battalion 1 (Must be approved by the Battalion Chief prior to dispatching)	
<b>Special Alarm</b>	<b>Entrapment Alarm</b> – 1 Engine, 1 Ladder, 1 Medic, Battalion 1 <b>Hazmat Alarm</b> – 1 Engine, 1 Ladder, 1 Medic, plus Engine 3, Hazmat 3 and Battalion 1 <b>Hazmat Alarm (Outside City)</b> – Engine 3, Hazmat 3, Battalion 1 <b>Tender Alarm</b> – 3 (Three) Tenders <b>Technical Rescue Alarm</b> – 1 Engine, 1 Ladder, Engine 2, 1 Medic, 1 Battalion Chief <b>Mayday Alarm</b> – 2 Engines (or 1 Engine and 1 Ladder) and 1 Medic	FD Command Staff notified via EverBridge Hazmat Incident Notification Group notified via EverBridge ASAP for any Hazmat Alarm
<b>Standard Alarm</b>	3 Engines, 1 Ladder, 1 Medic, 1 Battalion Chief	If a “Working Fire” is declared, the “Working Fire” notifications shall occur: FD Command Staff notified via EverBridge
<b>2<sup>nd</sup> Alarm</b>	“Standard Alarm” plus 2 (Two) additional fire companies; Engines or Ladders	FD Command Staff notified of 2 <sup>nd</sup> Alarm via EverBridge
<b>3<sup>rd</sup> Alarm</b>	“2 <sup>nd</sup> Alarm” plus 2 (Two) additional fire companies; Engines or Ladders	FD Command Staff notified to respond via EverBridge. Command Staff member to Dispatch. All FD Personnel notified via EverBridge
<b>4<sup>th</sup> Alarm</b>	“3 <sup>rd</sup> Alarm” plus 4 (Four) additional fire companies, Engines or Ladders	Callback of ALL off-duty personnel via EverBridge. Command Staff member to coordinate off-duty personnel

Table 18: This table shows the different alarms that the SFD is currently utilizing as well as the amount and type of units that are assigned to each alarm.

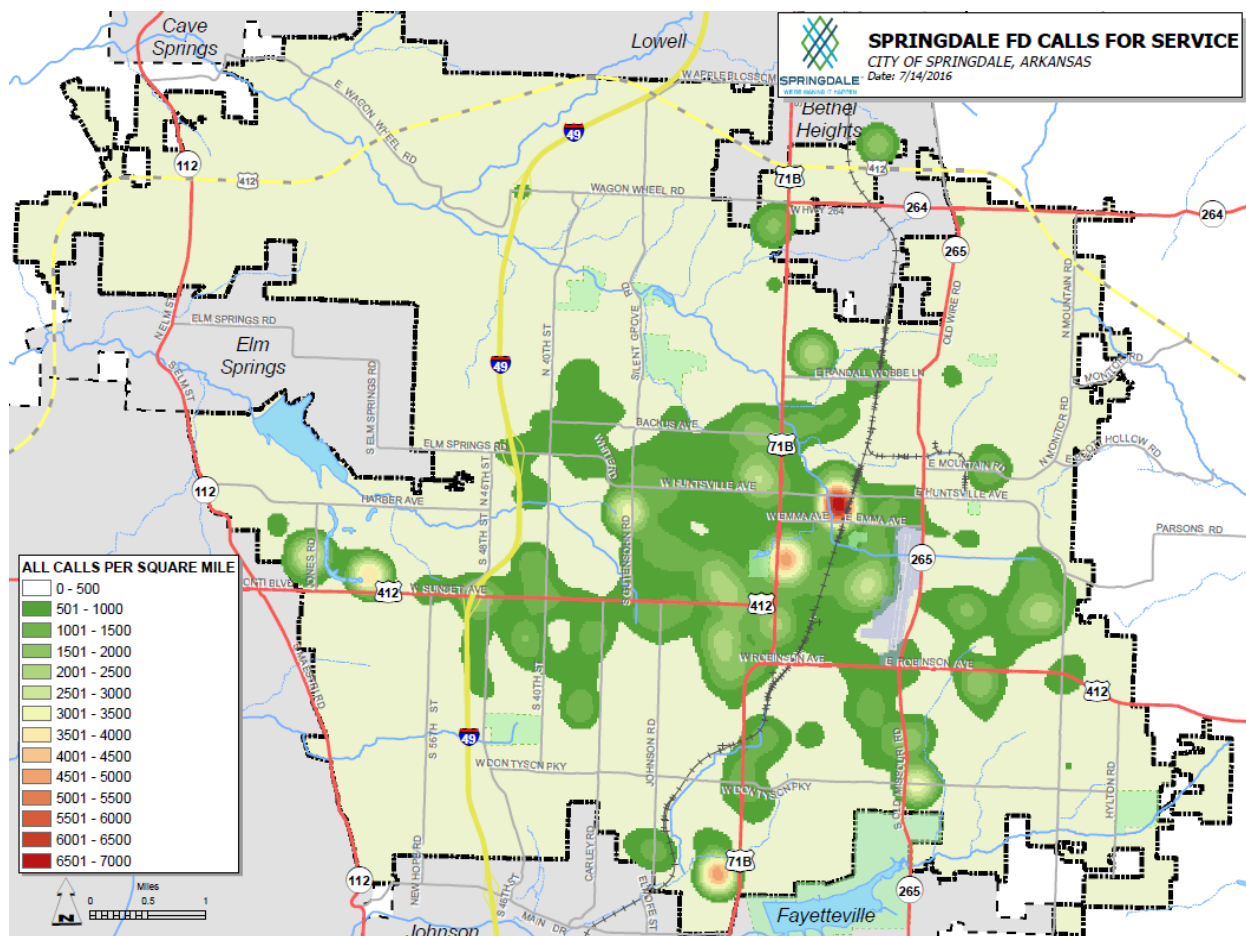


Figure 40: This is heat map of all incidents (fire, EMS, HAZMAT, and rescue) within the city. Any areas that have been highlighted are areas that have had over 500 calls per square mile in the past three years. This illustrates where the majority of our call density is located. Areas that are not highlighted have had incidents but not over 500 calls within the past three years.

The tables on pages 108 & 109 illustrate the critical tasks that must be accomplished and the amount of personnel required to complete those tasks. Critical tasks are tasks that when completed keep an emergency from expanding beyond the capabilities of on-scene personnel. These tables represent a baseline minimum for each level of risk. The total number of personnel represents what is called "the effective response force". The data in these tables represent what has been deemed the appropriate amount of personnel required to complete critical tasks on-scene. The tables were established by officers and firefighters within the department in conjunction with alarm information. Certain assignments are dispatched with higher or lower amounts of personnel based on the type of call and the level of risk associated. An example of this would be an engine and a medic unit for lower risk EMS calls instead of just a medic unit due to traditional operations and the citizens' expectations. This will need to be reevaluated in the near future to find a balance between keeping initial unit response times as low as possible, keeping units within their FMA/AMA as much as possible and providing the citizens the service they expect.

The moderate and maximum risk fire critical tasks were determined by running simulations with all three shifts and determining the amount of personnel it would take to complete tasks in the most efficient manner. Those numbers and times were average out to determine the most important tasks and the amount of personnel needed to complete each one. For the EMS, HAZMAT, and rescue incidents, department leaders in each category were consulted for their opinion and those individuals decided the number of personnel needed.

#### Fire Incident Critical Tasks (Low Risk)-Car, Dumpster, Tree Fires, Small Grass Fires

Critical Task	# of Personnel
Command/Scene Size-Up	1
Fire Attack	1
Pump Operator	1
<b>Total</b>	<b>3</b>

#### Fire Incident Critical Tasks (Moderate Risk)-Cooking Fire, Small Structures, Commercial Fire Alarms

Critical Task	# of Personnel
Command/Scene Size-Up	1
Fire Attack	1
Pump Operator	1
Water Supply	1
Search/Utilities/Ventilation	2

#### Fire Incident Critical Tasks (Maximum)-Outbuilding or Shed, Flu Fire, Commercial Vehicle Fire, Residential Structure Fire, Commercial Structure Fire

Critical Task	# of Personnel
Command/Scene Size-Up	1
Pump Operator	1
Fire Attack	2
Back Up Line	2
Water Supply	1
Rapid Intervention Team(RIT)	3
Forcible Entry/Search and Rescue	2
Utilities	1
Ventilation	2
<b>Total</b>	<b>15</b>

**Fire Incident Critical Tasks (High/Special Risk)-Fire in Identified Target Hazard, Explosion, Large Commercial Structure Fire, Large Scale Natural or Artificial Disaster**

Critical Task	# of Personnel
Command/Scene Size Up	1
Pump Operator	1*
Fire Attack	6*
Back Up Line	2*
Exposures	2
Water Supply	1
Rapid Intervention Team (RIT)	3
Forcible Entry	2
Search and Rescue	2*
Utilities	1
Ventilation	2*
Rehabilitation/Recovery	1
Safety Officer	1
Staging Officer	1
Public Information Officer	1
<b>Total</b>	<b>27*</b>

\*numbers and tasks can vary according to size and scope of the incidents.

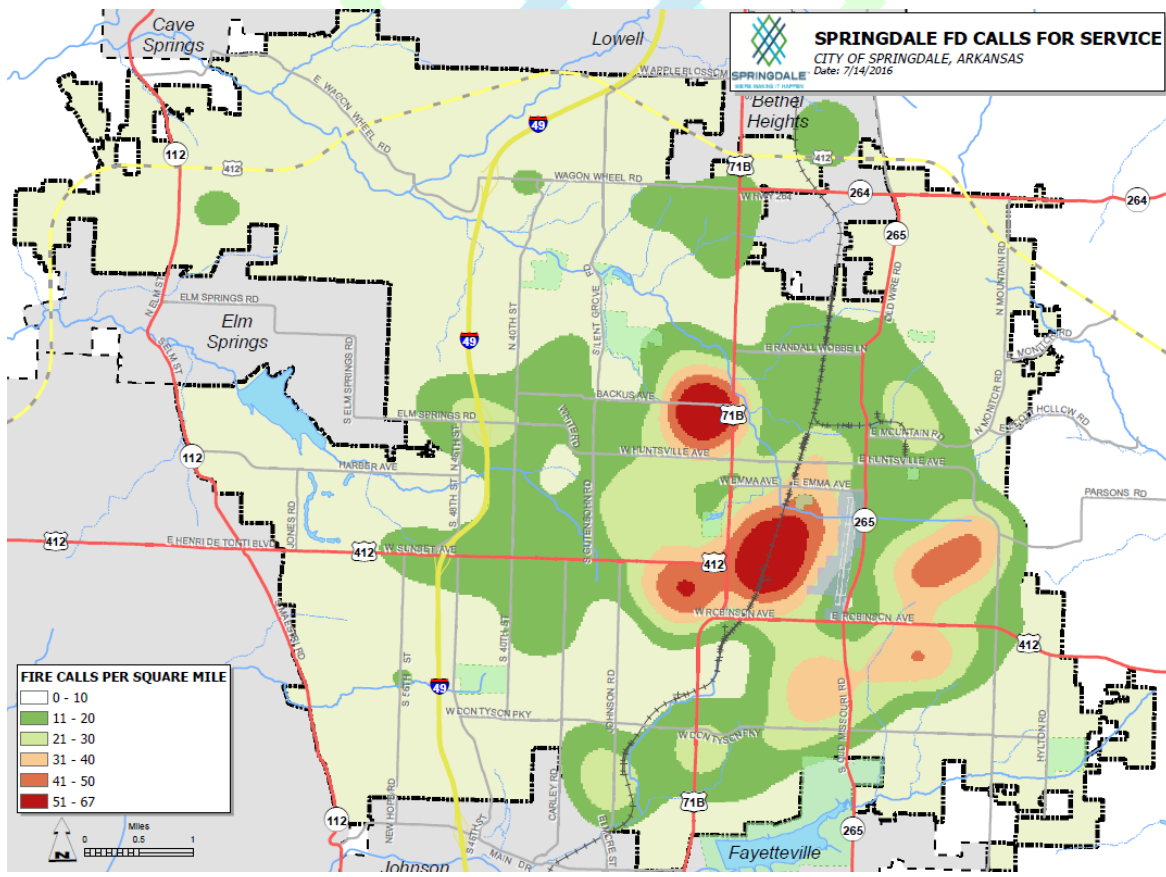


Figure 41: This heat map shows the areas where the most fire related incidents occur. The darker the color the more frequent the fire calls within that area.



**EMS Incident Critical Tasks (Low Risk)-Agency Assists, Lift Assists; Alpha, Bravo, and Omega level response calls**

Critical Task	# of Personnel
Patient Care	2
<b>Total</b>	<b>2</b>

\*Currently one engine/truck and one medic unit respond to all Alpha, Bravo and Omega Calls, while one engine/truck responds to lift assists. See Appendix F for definitions of Alpha, Bravo, Charlie, Delta, Echo, and Omega responses.

**EMS Incident Critical Tasks (Moderate Risk)-Cardiac Arrest, Charlie, Delta, Echo Level Responses**

Critical Task	# of Personnel
Patient Care	2
Patient Management/ Documentation	2
Command	1
<b>Total</b>	<b>5</b>

**EMS Incident Critical Tasks (Maximum Risk)-EMS Incident 5-7 Patients**

Critical Task	# of Personnel
Patient Care	4
Triage	1
Command	1
Patient Management/ Documentation	1
<b>Total</b>	<b>7</b>

**EMS Incident Critical Tasks (High/Special Risk) - EMS Incident 8 or More Patients**

Critical Task	# of Personnel
Patient Care	9
Triage	4
Command	1
Patient Management/Documentation/Liaison	3
Safety	1
<b>Total</b>	<b>20</b>

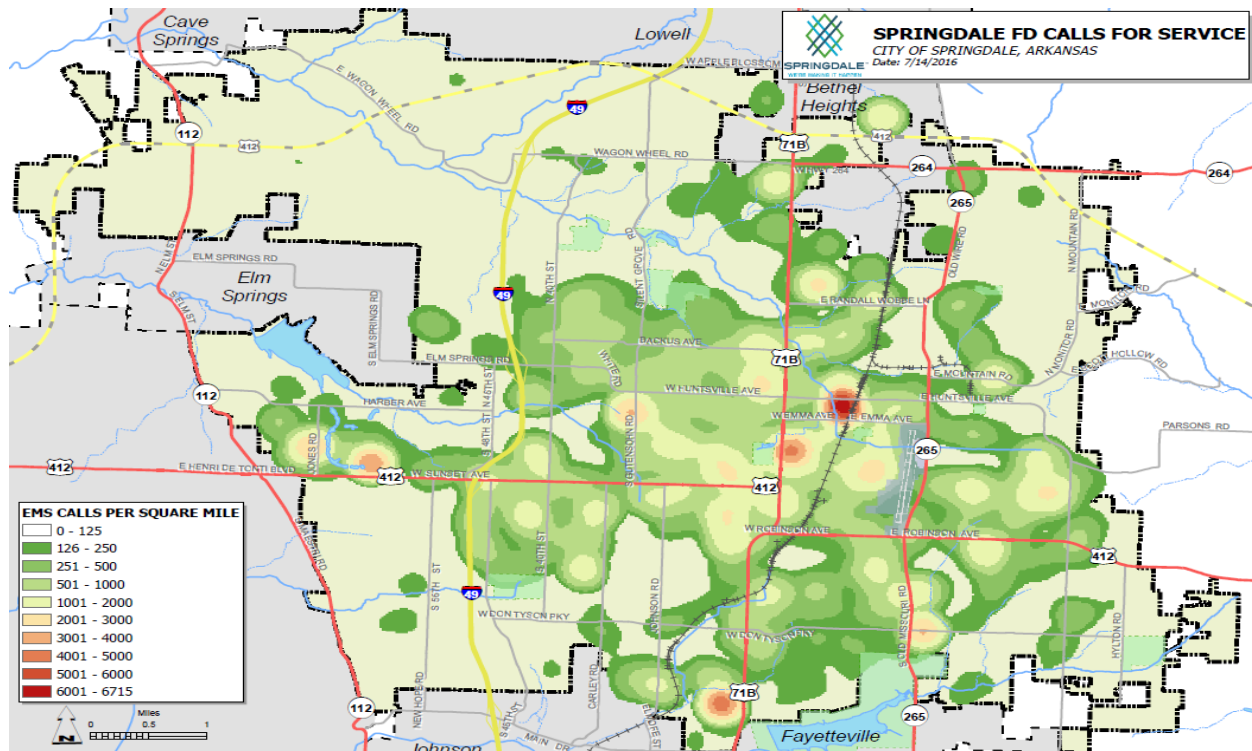


Figure 42: This heat map shows the areas where the most EMS incidents occur. The darker the color the more frequent the EMS calls within that area.

#### HAZMAT Incident Critical Tasks (Low Risk)-Carbon Monoxide without sickness, Odor Investigation

Critical Task	# of Personnel
Command/Scene Size-up	1
Hazard Mitigation	2
<b>Total</b>	<b>3</b>

#### HAZMAT Incident Critical Tasks-Moderate Risk-CO w/ Occupants, High Pressure NG or LPG

Critical Task	# of Personnel
Command/Scene Size-up	1
Mitigation	2
Patient Care/Perimeter	2
<b>Total</b>	<b>5</b>

#### HAZMAT Incident Critical Tasks (Maximum Risk)-Spills under 50 Gallons, Carbon Monoxide with Sickness, MVC with HAZMAT involved

Critical Task	# of Personnel
Command/Scene Size up	1
Mitigation	3
Research	1
Decontamination	2
Safety	1
<b>Total</b>	<b>8</b>

### HAZMAT Incident Critical Tasks (High/Special/Maximum Risk)-Large Scale Spills Over 50 Gallons/Any Unknown Substance/Toxic Spills (Semi-Trucks, Rail Cars, Factories), Radiological Incident

Critical Task	# of Personnel
Command/Scene Size-up	1
Entry Team Leader	1
Mitigation	6*
Research	1
HAZMAT Group Supervisor	1
Decontamination	5*
Safety	1
Rehab/Suiting Up/EMS Standby	2
Staging Officer	1
Logistics Officer	1
Public Information Officer	1
<b>Total</b>	<b>21*</b>

\*numbers and tasks can vary according to size and scope of the incident

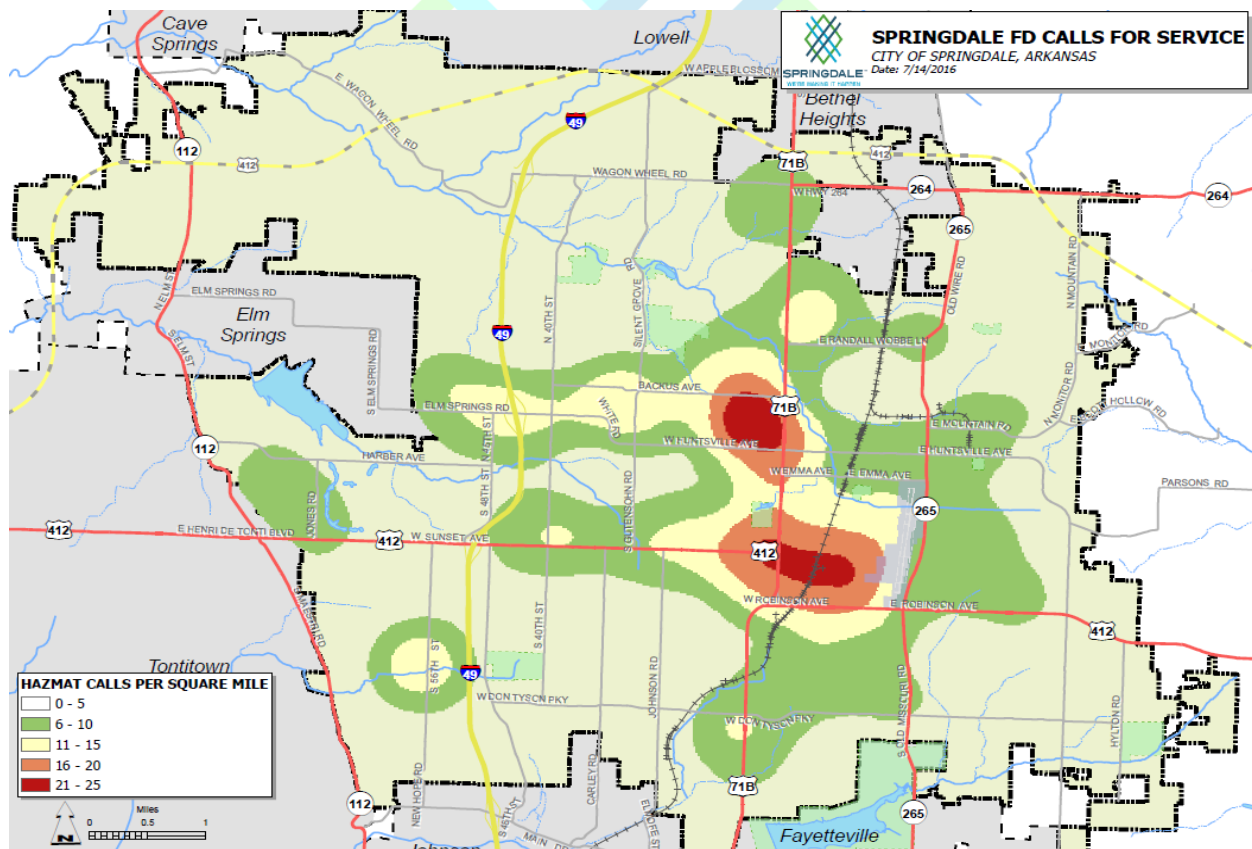


Figure43: This heat map shows the areas where the most HAZMAT incidents occur. The darker colors are the more frequent the HAZMAT calls within that area.

**Technical Rescue Critical Tasks (Low Risk)-Lock In/Out, MVC Single Unit Requested**

Critical Task	# of Personnel
Command/Scene Size-up	1
Patient Care/Management/Mitigation	2
<b>Total</b>	<b>5</b>

**Technical Rescue Critical Tasks (Moderate Risk) - MVC 1-4 Patients, MVC Vehicle vs. Pedestrian**

Critical Task	# of Personnel
Command/Scene Size-up	1
Patient Care/Management	2
Scene Safety/Mitigation	2
<b>Total</b>	<b>5</b>

**Technical Rescue Critical Tasks (Maximum Risk)-MVA with Extrication, Machinery Extrication**

Critical Task	# of Personnel
Command/Scene Size-up	1
Patient Care/Management	3
Scene Safety	2
Extrication	3
<b>Total</b>	<b>9</b>

**Technical Rescue Critical Tasks (High/Special Risk)-Confined Space, High Angle, Water, Collapse**

Critical Task	# of Personnel
Command/Scene Size-up	1
Patient Care/Management	3
Scene Safety	2
Rigging/Set-up	4
PIO/Liaison	2
<b>Total</b>	<b>12</b>

*Incidents may vary dependent on the type of incident and additional personnel may be required*

**SPRINGDALE**  
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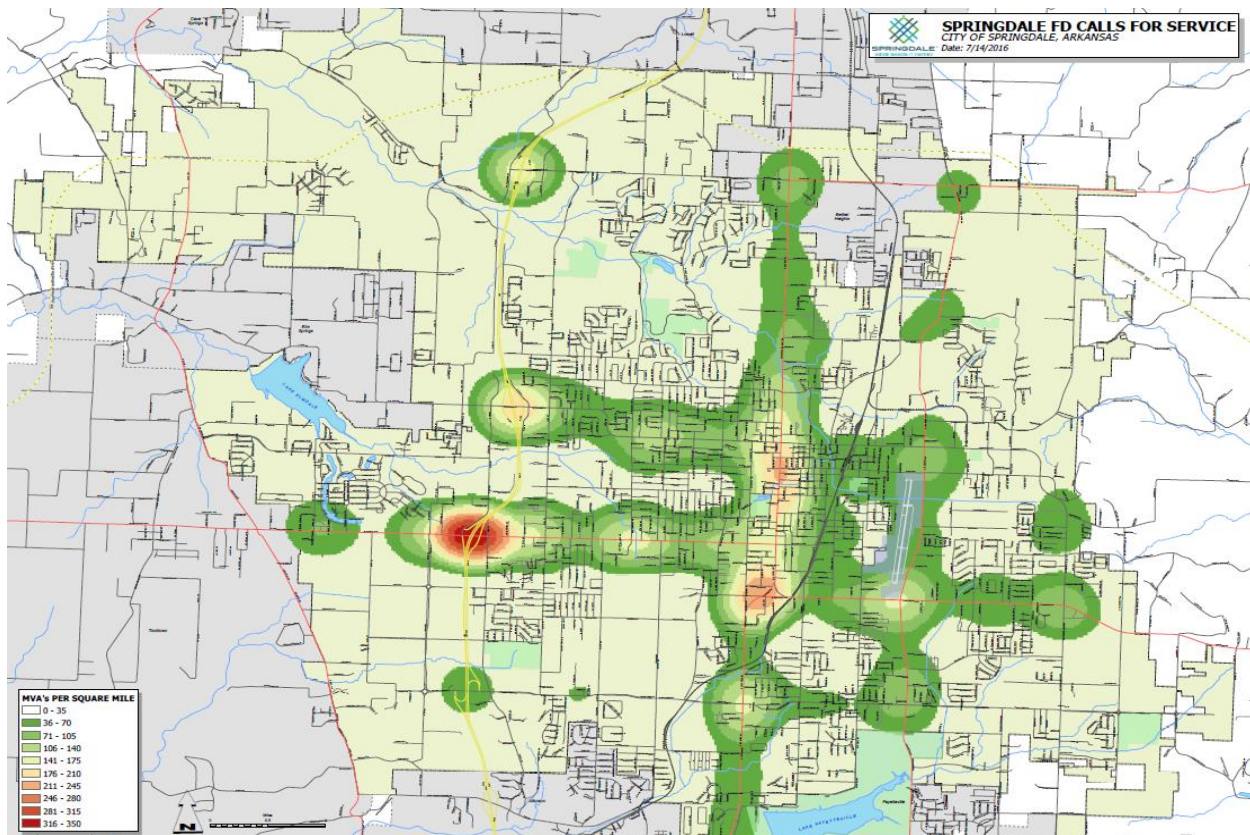


Figure 44: this heat map shows the areas where the most MVA's occur. The majority of MVA incidents are along the major thoroughfares of the city, because of this they tend to occur at higher speeds.

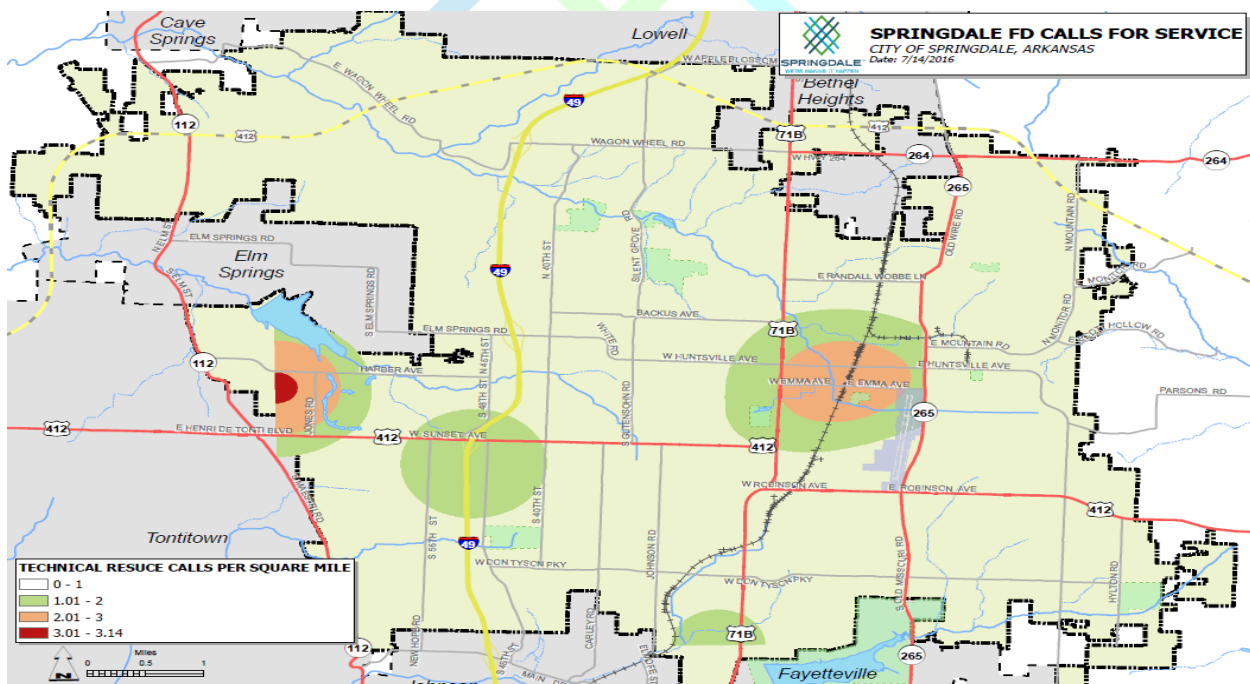


Figure 45: This is a heat map of the locations where the most frequent technical rescues, other than MVA/Extrication, occur.

## ***Setting Service Level Objectives***

As you can see from the maps in the risk assessment/critical tasks section and in Appendix A, most incidents occur where the population and buildings are most dense. While the frequency of calls in these areas is higher, the severity of calls does not change from one area to another. Moreover, as time is crucial to almost all incidents The SFD responds to, it is important that the department do everything within its powers to provide the same level of service to all areas of the city. While it is understood that there will be instances that will cause extended response times, the department must establish service level objectives to measure system efficiency to determine if those instances are an anomaly or if there is a greater issue that requires the department's attention.

## ***System Efficiency***

Fractal response analysis is used to measure system efficiency. Fractal times measure fractions of data that when added together creates a whole. This is a more accurate interpretation of system efficiency because unlike averages it cannot be skewed by a large amount of times that are above or below the average line. Average response time analysis takes an average of all response times and does not provide for as accurate of an analysis of the data as a fractal analysis. An example of average measurement would be stating, "The average response time for an incident is 8 minutes and 50 seconds"; this could be skewed by incidents with minimal response time due to a variety of factors or a small amount of incidents that are well above the average response time. Instead, fractal responses measure system efficiency by establishing the benchmark response time goal that the department is working towards and determines the percentage of time that the department meets that goal. These fractal times are used to measure the distribution of stations and the concentration of units available for response. An example of this would be stating:

"The department's goal is that for 90% of fire incidents requiring a moderate effective response force, the department will have its first unit capable of advancing the first line for fire control on scene in 6 minutes and 50 seconds and a complete effective response force in 8 minutes and 10 seconds."

This is a much more accurate measure of system performance because it cannot be skewed unless there is flawed data due to a failure in the system of data collection that needs to be identified and corrected. It also helps determine distribution and concentration levels of stations and units within the department.

**Distribution** is defined as the geographic location of all first-due resources for initial intervention. It is generally measured from fixed response points, such as fire stations, and expressed as a measure of time. This is used to ensure that there is an initial unit on scene to begin intervention on all incidents and all risk levels, within the community specified identified time range.

**Concentration** is defined as the spacing of multiple resources arranged so that an initial effective response force can arrive on scene within the time frame outlined in the on-scene performance expectations. For a maximum risk fire in The City of Springdale; can we get three engines, a ladder truck, a medic unit, and a battalion chief vehicle on scene within the benchmark goals set by the department and the community?

The Springdale Fire Department's distribution goal is to have the first unit capable of mitigation on scene within 6 minutes and 50 seconds of receiving the 911 call in the Public Safety Answering Point (PSAP). This goal was determined through department member and citizen input during the department's strategic planning sessions. The city and the department have placed six stations in areas that traditionally have had the largest needs for service and best suited the economic needs of the city and the emergency needs of the largest majority of its Citizens. Since 1998, when the last of the original six stations were constructed, the city has grown through annexation to an area of 47.25 square miles. The department has relocated Stations 2 & 3 to better serve some of the annexed areas, population growth, and commercial development. There are still areas of the city that will need stations to provide the same level of service to all of Springdale's Citizens. The concentration goal is important in determining if units need to be relocated to other areas in the city to help establish effective response forces within the specified goal for each risk level associated with an incident.

The department has to determine what highly specialized equipment to purchase for lower frequency incidents. The department must consider response times and service levels while being fiscally responsible with taxpayer funds. The city and the department have an obligation to communicate the department's limitations to the citizens who could be affected by the longer response times. In addition, the department should take steps to secure adequate funding for stations, equipment, and personnel in these under-protected areas as well as train and self-improve to reduce response times and make them comparable to the response times throughout the city.

With projected growth in some of the more remote areas of the city, it is difficult to justify operating with two different response time expectations. Response times should be the same throughout the city, and all citizens should have access to the same level of service. The purpose of this document is to inform city leaders so that they are better equipped to work in conjunction with the department to determine the best methods of providing quality service throughout the city.

(Continued on Next Page)

Station	B1	B2	BR1	E1	E2	E3	E4	E5	H3	L1	L6	M2	M3	M4	M5	R2	Totals
Station																	
1	206	6	19	4,625	176	195	86	153	8	1,365	59	703	1,784	476	1,526	2	11,389
2	112	3	11	274	3,275	17	26	85		208	144	2,147	93	175	348	1	6,919
3	153	4	13	236	36	3,000	117	25	10	267	19	53	2,068	371	157	3	6,532
4	163	2	10	93	116	150	3,561	14	2	62	389	242	325	2,761	53	2	7,945
5	183	3	23	267	146	86	31	3,556	1	290	18	325	156	44	2,899		8,028
6	132	3	5	99	346	18	398	14	5	61	3,587	1,241	96	1,559	68	5	7,637
41	2					4	9					4	163	265	20		467
51	3				1		8				3	41	10	107	5		178
61	1				2		1				6	18	2	12	4		46
71	4			6	3		1	7		3	1	26	22	33	348		454
81	2		1	1		3	1	1	1		1	3	29	27	24		94
91	7			1	3	2		5	2			5		4	3		32
101											1		1				2
111												1	1	1	10		13
121				1								2	1	1	1		6
Totals	969	22	82	5,605	4,107	3,475	4,242	3,861	29	2,257	4,230	4,816	4,753	5,838	5,468	13	49,767

Table 15: This table represents the number of incidents each unit responded to in SFD districts and mutual/automatic aid from 2015-2017. M1 and M6 (out of service as of Feb 2016) totals were removed to accommodate for space.

The table above illustrates the number of incidents each unit responded to in each of the department's response districts and mutual/automatic aid. It shows a cumulative amount of responses for each unit, and it is further broken down to show the total responses inside the city and the total responses outside of the city. As you can see, Engine 1 and Medic 1 have the highest call volume of any units within the city. With the relocation of Stations 2 and 3 in July 2015, the ambulance management areas (AMA's) were realigned. Medic 1 was moved to Station 3 with the unit designation of Medic 3, and Medic 6 was relocated to Station 2 with the unit designation of Medic 2. These changes were made to even out the workload between all four of the medic units, and the changes have proven to be successful so far. It will be far more difficult to disperse the workload between engines until new stations or units are added.

The call volume per station and unit is critical in determining both concentration and distribution. If a unit is frequently unavailable because of a higher than average call volume, the next closest unit will have to be dispatched which could possibly delay the response time beyond the service level objective due to a longer travel distance. Transversely, if a unit has a much lower workload than other units do, the citizens and the city are not seeing as high a return on investment as a unit that handles higher call volumes. That being said, future planning for call volume increases and population growth must be taken into account to ensure that The department and the city does not jump to a conclusion before attempting to redistribute workloads. They must utilize past patterns and available data to formulate the most feasible plan for all involved.

To have a better perspective on the concentration levels and the capabilities of the department Appendix G shows the areas of the city that are accessible within the 4 minute travel time from each station and the areas of the city that can have an effective response force of 17 personnel within the stated performance objective. As you can see from the maps, a large portion of the



city does not have coverage for an effective response force, or the allotted travel time for a first due unit.

## Performance Objectives and Evaluations

	2015	2016	2017	Totals
Fire	227	245	289	761
EMS	7,536	6,046	6,384	19,966
Technical Rescue	715	547	568	1,830
HAZMAT	76	82	87	245

*Table 19: This table represents the total amount of calls that SFD responded to from 2015 to 2017. This includes medic unit calls to surrounding cities that are no longer in the department's jurisdictional boundaries as of February 1, 2016.*

### Benchmark Performance Goals

The Springdale Fire Department has adopted these response goals for the services it provides: The statements are goal times based on data from 2015-2017.

#### Low Risk Fire Incidents

For 90% of all low risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer shall be 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all low risk fire incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer shall be 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This ERF must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

#### Moderate Risk Fire Incidents

For 90% of all moderate risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer shall be 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.



For 90% of all moderate risk fire incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 2 officers (considered two engines or one engine and one ladder) is 8 minutes and 10 seconds. The engines or ladders will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. The units must have at least three personnel each who are certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack, and conducting search, utility control, and ventilation. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### **Maximum Risk Fire Incidents**

For 90% of all moderate risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer shall be 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all maximum risk fire incidents, the total response time for the arrival of the ERF, staffed with 10 firefighters and 3 officers (considered three engines, one ladder, one medic unit, and one battalion chief) is 11 minutes and 30 seconds. The engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. The ladder trucks will have at least a 75ft ladder as well as additional ladders, RIT equipment, and forcible entry tools. The medics will be equipped with a full complement of ALS equipment, and the battalion chief vehicle will have all command post capabilities. The engines and ladders must have at least three personnel each who are certified to SFD requirements, the medics must have two personnel on certified as a paramedic the other at least EMTB. The battalion chief must be certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack and a back-up line, establishing a RIT team. The ERF must also be able to conduct forcible entry, search, utility control, and ventilation. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### **High/Special Risk Fire Incidents**

For 90% of all moderate risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer shall be 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are

done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all high/special risk fire incidents, the total response time for the arrival of the ERF, staffed with 16 firefighters and 5 officers (considered four engines, two ladders, two medic units, and one battalion chief) is 14 minutes and 0 seconds. The engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. The ladder trucks will have at least a 75ft ladder as well as additional ladders, RIT equipment and forcible entry tools. The medics will be equipped with a full complement of ALS equipment, and the battalion chief vehicle will have all command post capabilities. The engines and ladders must have at least three personnel each who are certified to SFD requirements, the medics must have two personnel on certified as a paramedic the other at least EMTB. The battalion chief must be certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack and a back-up line, establishing a RIT team. The ERF must also be able to conduct forcible entry, search, utility control, and ventilation. Finally, the ERF must be able to protect exposures and establish additional rehab, safety, staging, and public information personnel. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

#### **Low Risk EMS Incidents**

For 90% of all low risk EMS incidents, the total response time for the arrival of the first due unit, staffed with at least 2 firefighters will be 6 minutes and 50 seconds. The first due unit is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all low risk EMS incidents, the total response time for the arrival of the ERF, staffed with at least 2 firefighters will be 6 minutes and 50 seconds. The ERF is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

#### **Moderate Risk EMS Incidents**

For 90% of all moderate risk EMS incidents, the total response time for the arrival of the first due unit, staffed with at least 2 firefighters will be 6 minutes and 50 seconds. The first due unit (engine/ladder or medic) is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources.

These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all moderate risk EMS incidents, the total response time for the arrival of the ERF, staffed with at least 4 firefighters and 1 officer (one engine/ladder and one medic) will be 8 minutes and 10 seconds. The ERF is capable of providing standard BLS and ALS equipment to begin mitigation. This engine must have at least three personnel who are certified to SFD requirements and at least EMTB. The medics must have two personnel, one who is certified as a paramedic and one at least EMTB. The units will be capable of establishing incident command, beginning patient care, documentation, transport, and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### **Maximum Risk EMS Incidents**

For 90% of all maximum risk EMS incidents, the total response time for the arrival of the first due unit, staffed with at least 2 firefighters will be 6 minutes and 50 seconds. The first due unit (engine/ladder or medic) is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all maximum risk EMS incidents, the total response time for the arrival of the ERF, staffed with at least 6 firefighters and 1 officer (one engine/ladder and two medics) will be 10 minutes and 0 seconds. The ERF is capable of providing standard BLS and ALS equipment to begin mitigation. This engine must have at least three personnel who are certified to SFD requirements and at least EMTB. The medics must have two personnel, one who is certified as a paramedic and one at least EMTB. The units will be capable of establishing incident command, triage, beginning patient care, documentation, transport, and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### **High/Special Risk EMS Incidents**

For 90% of all high/special risk EMS incidents, the total response time for the arrival of the first due unit, staffed with at least 2 firefighters will be 6 minutes and 50 seconds. The first due unit (engine/ladder or medic) is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all high/special risk EMS incidents, the total response time for the arrival of the ERF, staffed with at least 6 firefighters and 1 officer (four engine/ladders, four medics and one battalion chief) will be 14 minutes and 0 seconds. The ERF is capable of providing standard BLS and ALS equipment to begin mitigation. This engine must have at least three personnel who are certified to SFD requirements and at least EMTB. The medics must have two personnel, one who is certified as a paramedic and one at least EMTB. The battalion chief will be one staff member trained to SFD requirements. The units will be capable of establishing incident command, triage, beginning patient care, documentation, transport, and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### **Low Risk HAZMAT Incidents**

For 90% of all low risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be 6 minutes and 50 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all low risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, shall be 6 minutes and 50 seconds. The ERF is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

### **Moderate Risk HAZMAT Incidents**

For 90% of all moderate risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be 6 minutes and 50 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all moderate risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 1 officer (one engine/ladder and one medic), shall be 8 minutes and 10 seconds. The engine is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The medic is capable of



providing ALS equipment. The engine/ladder must have at least three personnel who are certified to SFD requirements and hazmat operations. The medic must have one person who is certified as a paramedic, and one that is at least EMTB. These units will be capable of establishing command and requesting additional resources, and beginning hazard mitigation, patient care, and establishing a perimeter. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

### **Maximum Risk HAZMAT Incidents**

For 90% of all maximum risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be 6 minutes and 50 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all maximum risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 6 firefighters and 3 officers (one engine/ladder, Engine 3, one medic, and a battalion chief), shall be 10 minutes and 0 seconds. The engine/ladder is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. Engine 3 is capable of providing advanced monitoring equipment. The medic is capable of providing ALS equipment. The battalion chief is capable of providing command post equipment. The engine/ladder must have at least three personnel who are certified to SFD requirements and hazmat operations. Engine 3 must have at least three personnel, two must be certified to SFD requirements and hazmat technician and one to at least hazmat operations. The medic must have one person who is certified as a paramedic, and one that is at least EMTB. The battalion chief must be certified to SFD requirements. These units will be capable of establishing command and requesting additional resources, beginning hazard mitigation, patient care, research, decontamination, and establishing a perimeter. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

### **High/Special Risk HAZMAT Incidents**

For 90% of all high/special risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be 6 minutes and 50 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation.

These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all high/special risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 8 firefighters and 4 officers (one engine, one ladder, Engine 3/HAZMAT 3, one medic, and a battalion chief), shall be 12 minutes and 0 seconds. The engine/ladder are capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. Engine 3 is capable of providing advanced monitoring equipment. The medic is capable of providing ALS equipment. HAZMAT 3 is capable of providing FEMA level 2 equipment. The battalion chief is capable of providing command post equipment. The engine/ladder must have at least three personnel who are certified to SFD requirements and hazmat operations. Engine 3 must have at least three personnel, two must be certified to SFD requirements and hazmat technician and one to at least hazmat operations. HAZMAT 3 will be staffed with Engine 3 personnel. The medic must have one person who is certified as a paramedic, and one that is at least EMTB. The battalion chief must be certified to SFD requirements. These units will be capable of establishing command and requesting additional resources, beginning hazard mitigation, patient care, research, decontamination, and establishing a perimeter. They will also be able to establish team leaders and additional staging, logistics, and PIO positions. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

#### **Low Risk Technical Rescue Incidents**

For 90% of all low risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all low risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

#### **Moderate Risk Technical Rescue Incidents**

For 90% of all moderate risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump,

and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all moderate risk fire incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 1 officer (considered one engine/ladder and one medic unit), is 9 minutes and 10 seconds. Engine/ladders will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The medic unit will be capable of providing a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units must have at least one member that is certified to the level of Paramedic. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

#### **Maximum Risk Technical Rescue Incidents**

For 90% of all maximum risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all maximum risk fire incidents, the total response time for the arrival of the ERF, staffed with 8 firefighters and 4 officers (considered one engine, one ladder, Engine 2/Rescue 2, one medic unit, and one battalion chief), is 18 minutes and 0 seconds. Engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The ladders will be capable of having hydraulic extrication tools, stabilization equipment, rope rescue bags, and a variety of technical rescue tools. Engine 2 will be capable of staffing rescue 2 and providing advanced technical rescue equipment. The medic unit will be equipped with a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units must have at least one member that is certified to the level of Paramedic. Engine 2/Rescue 2 personnel will be certified to technician level in 4 recognized disciplines. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, rigging/set-up of equipment, providing staffing for a PIO and liaison officer, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

**High/Special Risk Technical Rescue Incidents**

For 90% of all high/special risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all high/special risk fire incidents, the total response time for the arrival of the ERF, staffed with 6 firefighters and 3 officers (considered one engine, one ladder, one medic unit, and one battalion chief), is 11 minutes and 0 seconds. Engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The ladders will be capable of having hydraulic extrication tools, stabilization equipment, rope rescue bags, and a variety of technical rescue tools. The medic unit will be equipped with a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units must have at least one member that is certified to the level of Paramedic. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, extrication, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.



**SPRINGDALE**  
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(Continued on Next Page)



The department has worked with Local and National IAFF to obtain travel time maps and information based on four and eight-minute travel times for events requiring different Effective Response Forces. The table and maps below are the result of that data collection and additional maps may be referenced in Appendix G.

*SUMMARY OF THE SPRINGDALE FD RESPONSE CAPABILITY AS MODELED*

	EXISTING DEPLOYMENT CAPABILITIES	DEPLOYMENT CAPABILITIES PRIOR DEPLOYMENT CHANGES *	PROPOSED DEPLOYMENT CAPABILITIES**
4 – MIN FIRE COMPANY	51.2%	45.4%	61.9%
8 – MIN FIRE COMPANY	90.9%	87.4%	96.4%
4 –MIN “2 IN – 2 OUT”	45.7%	37.8%	45.9%
8 –MIN “2 IN – 2 OUT”	88.3%	83.2%	93.5%
8 – MIN 15 FF	36.3%	35.6%	45.3%
8 – MIN 26 FF	4.4%	6.7%	5.5%

Figure 46: This Chart shows how deployment capabilities have changed since relocating Stations 2 and 3, as well as how they could improve if additional stations were added.

SPRINGDALE  
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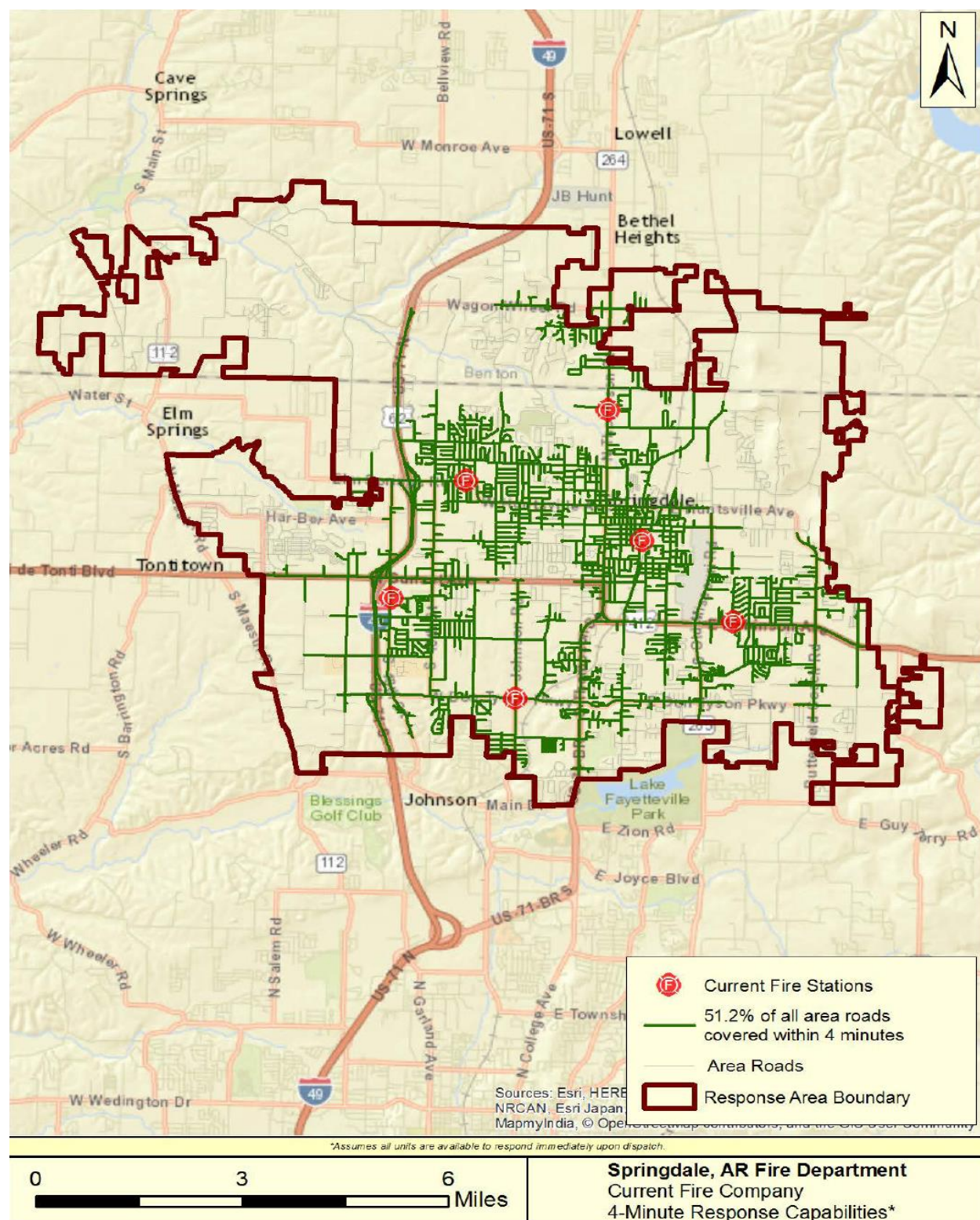


Figure 47: This map shows the current areas of the city that SFD can respond to within 4 minutes of travel times. Even if turnout times and dispatch times are within acceptable limits, there are many areas of the city that are not able to have a unit on scene within the amount of time that the citizens expect. While this has improved since relocating Stations 2 and 3, there are still many areas that are left uncovered.



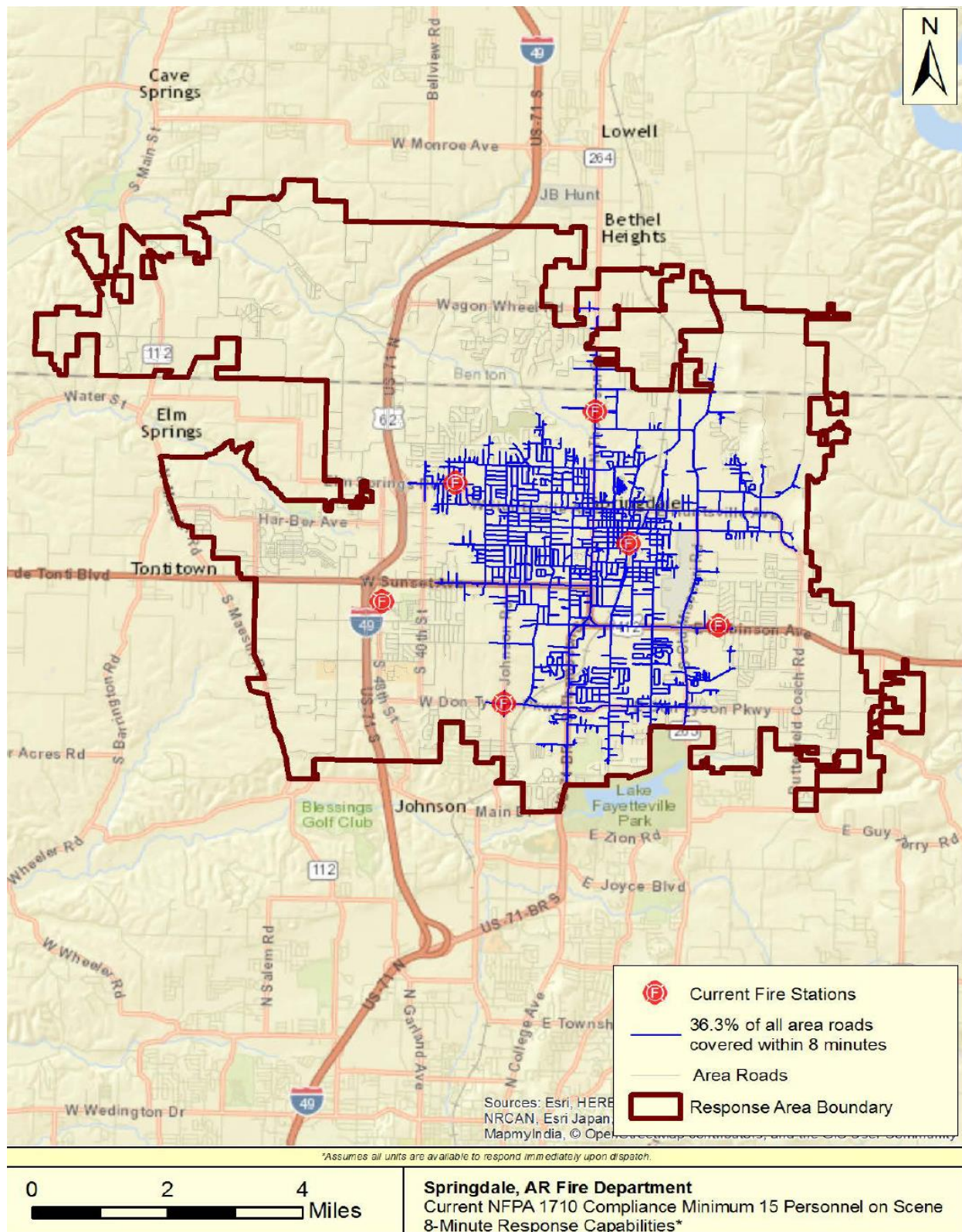


Figure 48: This map shows what areas of the city can have 15 firefighting personnel on scene within 8 minutes of travel time. Even if turnout times and dispatch times are within acceptable limits, SFD is unable to reach much of the city in time to effectively execute all critical tasks associated with a fire.

(Low Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	mm:ss	mm:ss	mm:ss	mm:ss
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	mm:ss	mm:ss	mm:ss	mm:ss
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	mm:ss	mm:ss	mm:ss	mm:ss
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	mm:ss	mm:ss	mm:ss	mm:ss
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	mm:ss	mm:ss	mm:ss	mm:ss
			n=XXX	n=XXX	n=XXX	n=XXX
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	mm:ss	mm:ss	mm:ss	mm:ss
		Rural	N/A	N/A	N/A	N/A

Table 20: CFAI response times example table. This is used to measure baseline performance compared to benchmark goals. Ideally improvements on a year to year basis is what the department is looking to achieve.

### Fire Responses and Baseline Times

The chart and graph below show that Station 1 units respond to the most fire calls of any station in the city. This station covers the most densely populated and oldest parts of the city. These illustrations represent all fire responses within the city. The city has traditionally not had a large number of fire responses for maximum or high/special type fires. It averages around 40 fire calls per year that require a standard alarm or higher. Part of this can be attributed to an effective Community Risk Reduction program as well as stricter building codes and large amounts of newer construction.

Station	Total	2015	2016	2017
1	139	49	49	41
2	79	21	24	34
3	112	35	36	41
4	125	39	31	55
5	114	26	50	38
6	97	28	37	42

Table 21: This table shows the number of fire related incidents that occurred in each of the department's FMAs from 2015 to 2017.

In 2015 the department changed its response model for a standard alarm (moderate/maximum risk) to three engines, a ladder truck, a medic unit, and a battalion chief. This makes the minimum staffing for an incident 15 persons. This allows for all identified critical tasks to be accomplished at most incidents.

The tables below show Springdale Fire Departments performance for all fire incidents. The department has worked to improve its times and has identified several areas that it can work on to improve those times such as data collection and faster alarm handling and turnout.

Table 23-The following 4 tables represent fire response times for all risk levels from 2015-2017

(Low Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:45	1:39	1:50	1:47
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:56	1:55	1:47	2:03
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	6:07	5:56	5:54	7:14
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	6:07	5:56	5:54	7:14
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	8:26	8:22	7:58	9:16
			n=328	n=121	n=109	n=98
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	8:26	8:22	7:58	9:16
		Rural	N/A	N/A	N/A	N/A

For 90% of all low risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer is 8 minutes and 26 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in



accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all low risk fire incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer is 8 minutes and 26 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This ERF must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

(Moderate Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:02	1:25	1:22	2:19
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:13	2:11	2:18	2:08
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	4:14	3:55	3:59	4:46
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	6:50	6:36	8:15	5:55
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	7:22	6:14	7:03	8:15
			n=73	n=22	n=24	n=27
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	8:26	8:03	10:04	7:13
			n=37	n=11	n=11	n=14
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all moderate risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer is 7 minutes and 22 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all moderate risk fire incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 2 officers (considered two engines or one engine and one ladder)

is 8 minutes and 26 seconds. The engines or ladders will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. The units must have at least three personnel each who are certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack, and conducting search, utility control, and ventilation. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

(Maximum Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:45	1:39	1:58	1:46
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:10	2:17	1:46	2:05
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	5:07	4:41	3:30	5:59
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	10:29	11:28	10:09	8:44
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	7:27	7:09	5:51	8:24
			n=122	n=54	n=32	n=36
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	12:24	13:34	12:01	11:20
			n=50	n=21	n=13	n=16
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all maximum risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer is 7 minutes and 27 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all maximum risk fire incidents, the total response time for the arrival of the ERF, staffed with 10 firefighters and 3 officers (considered three engines, one ladder, one medic unit, and one battalion chief) is 12 minutes and 24 seconds. The engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and

firefighting equipment. The ladder trucks will have at least a 75ft ladder as well as additional ladders, RIT equipment, and forcible entry tools. The medics will be equipped with a full complement of ALS equipment, and the battalion chief vehicle will have all command post capabilities. The engines and ladders must have at least three personnel each who are certified to SFD requirements, the medics must have two personnel on certified as a paramedic the other at least EMTB. The battalion chief must be certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack and a back-up line, establishing a RIT team. The ERF must also be able to conduct forcible entry, search, utility control, and ventilation. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

(High Risk) Fire Suppression - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:18	1:18	0:29	0:00
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:01	2:03	1:29	0:00
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	4:08	4:20	1:17	0:00
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	9:47	N/A	N/A	9:47
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	7:25	7:40	3:15	0:00
			n=4	n=2	n=1	n=1
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	12:12	N/A	N/A	12:12
			n=1	n=0	n=0	n=1
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all high/special risk fire incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer is 7 minutes and 25 seconds. The first due unit is capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. This unit must have at least three personnel who are certified to SFD requirements. This unit will be capable of establishing command and requesting additional units, establishing a water supply, and fire attack. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all high/special risk fire incidents, the total response time for the arrival of the ERF, staffed with 16 firefighters and 5 officers (considered four engines, two ladders, two medic units, and one battalion chief) is 12 minutes and 12 seconds. The engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a full complement of hose and firefighting equipment. The ladder trucks will have at least a 75ft ladder as well as additional ladders, RIT equipment and forcible entry tools. The medics will be equipped with a full complement of ALS equipment, and the battalion chief vehicle will have all command post capabilities. The engines and ladders must have at least three personnel each who are certified to SFD requirements, the medics must have two personnel on certified as a paramedic the other at least EMTB. The battalion chief must be certified to SFD requirements. The units will be capable of establishing command and requesting additional units, establishing a water supply, fire attack and a back-up line, establishing a RIT team. The ERF must also be able to conduct forcible entry, search, utility control, and ventilation. Finally, the ERF must be able to protect exposures and establish additional rehab, safety, staging, and public information personnel. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

### ***EMS Responses and Baseline Times***

These table below shows all EMS responses within the city broken down by station. It should also be noted that EMS calls make up the largest number of service calls the department receives. The department utilizes four medic units and seven engine/ladders to cover the six fire management areas (FMA's)

Station	Total	2015	2016	2017
1	4,318	1,386	1,463	1,469
2	2,744	974	857	913
3	2,519	874	797	848
4	2,870	881	945	1,044
5	2,918	1,055	917	946
6	2,962	996	945	1,021

*Table 22: This table shows the number of EMS related incidents by station from 2015-2017*

Until 2016, the department's EMS medic unit coverage area included surrounding communities within other area fire department jurisdictions. This made data collection difficult as only the Springdale incident's data was available for all risk level calls. To provide a better picture of the department's response times within the city limits and to better plan for the future, the data utilized was limited to incidents within the city limits where units responded with lights and sirens (Code 3). Since the department still sends one Engine and one medic unit to all EMS calls within the city unless specifically requested ERF call volume numbers for low, maximum, and high/special incidents are significantly lower and none met the required ERF or emergent response to be considered for data analysis. Moderate risk is listed below.



Moderate Risk EMS - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
Alarm Handling	Pick-up to Dispatch	Urban	1:50	1:37	1:59	1:58
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time 1st Unit	Urban	1:48	1:52	1:43	1:46
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1st Unit Distribution	Urban	5:33	5:28	5:25	5:43
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	7:22	7:27	7:24	7:10
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	7:52	7:43	7:49	8:07
			n=10057	n=4330	n=2699	n=3028
		Rural	N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	9:26	9:22	9:37	9:24
			n=9589	n=4145	n=2594	n=2850
		Rural	N/A	N/A	N/A	N/A

Table 23: The following tables show the EMS response times by risk levels from 2015-2017

For 90% of all moderate risk EMS incidents, the total response time for the arrival of the first due unit, staffed with at least 2 firefighters is 7 minutes and 52 seconds. The first due unit (engine/ladder or medic) is capable of providing standard BLS equipment to begin mitigation. This unit must have at least two personnel who are certified to SFD requirements and at least EMTB. This unit will be capable of beginning patient care and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

For 90% of all moderate risk EMS incidents, the total response time for the arrival of the ERF, staffed with at least 4 firefighters and 1 officer (one engine/ladder and one medic) is 9 minutes and 26 seconds. The ERF is capable of providing standard BLS and ALS equipment to begin mitigation. This engine must have at least three personnel who are certified to SFD requirements and at least EMTB. The medics must have two personnel, one who is certified as a paramedic and one at least EMTB. The units will be capable of establishing incident command, beginning patient care, documentation, transport, and requesting additional resources. These operations are done in accordance with departmental standard operating procedures while providing for safety of responders and the general public.

The department did not have any incidents that qualify as low, maximum, or high risk between 2015 and 2017.

## Rescue Responses and Baseline Times

The chart and graph below show the total amount of technical rescue incidents by station from 2015-2017. The majority of these incidents are motor vehicle accidents and motor vehicle extrications.

Station	Total	2015	2016	2017
1	316	91	118	107
2	226	81	68	77
3	210	71	69	70
4	335	112	116	107
5	245	93	67	85
6	312	117	94	101

Table 24: This table shows the number of technical rescue incidents from 2015-2017

(Low Risk) Tech Rescue - 90th Percentile Times - Baseline Performance			2015- 2017	2017	2016	2015
Alarm Handling	Pick-up to Dispatch	Urban	1:47	0:22	2:13	2:52
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time 1st Unit	Urban	2:38	5:15	0:09	1:49
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1st Unit Distribution	Urban	11:58	2:48	8:44	11:18
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	11:58	2:48	8:44	16:01
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	15:39	6:51	10:13	17:35
			n=19	n=4	n=1	n=15
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	15:39	6:51	10:13	17:35
		Rural	N/A	N/A	N/A	N/A

For 90% of all low risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is: 15 minutes and 39 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all low risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, is 15 minutes and 39 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

(Moderate Risk) Tech Rescue - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:47	1:35	1:56	2:15
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:54	1:55	1:56	1:49
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	5:28	5:29	5:10	5:36
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	8:08	8:18	8:04	8:08
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	8:08	8:00	8:05	8:37
			N=1122	N=435	N=327	N=360
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	10:38	10:30	10:25	10:48
			N=1025	N=387	N=306	N=332
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all low risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 8 minutes and 8 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all moderate risk fire incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 1 officer (considered one engine/ladder and one medic unit), is 10 minutes and 38 seconds. Engine/ladders will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The medic unit will be capable of providing a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units

must have at least one member that is certified to the level of Paramedic. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

(Maximum Risk) Tech Rescue - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:58	1:38	2:56	1:31
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	2:04	2:11	1:52	2:08
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	5:32	6:14	4:40	4:53
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	10:21	10:08	10:12	10:22
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	8:32	8:43	7:46	7:44
			N=71	N=19	N=21	N=31
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	12:18	11:52	11:44	11:48
			N=20	N=5	N=6	N=9
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all maximum risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 8 minutes and 32 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all maximum risk fire incidents, the total response time for the arrival of the ERF, staffed with 8 firefighters and 4 officers (considered one engine, one ladder, Engine 2/Rescue 2, one medic unit, and one battalion chief), is 12 minutes and 18 seconds. Engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The ladders will be capable of having hydraulic extrication tools, stabilization equipment, rope rescue bags, and a variety of technical rescue tools. Engine 2 will be capable of staffing rescue 2 and providing advanced technical rescue equipment. The medic unit will be equipped with a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units must have at least



one member that is certified to the level of Paramedic. Engine 2/Rescue 2 personnel will be certified to technician level in 4 recognized disciplines. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, rigging/set-up of equipment, providing staffing for a PIO and liaison officer, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

(High/Special Risk) Tech Rescue - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	3:27	2:47	0:12	2:57
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:33	1:20	0:55	1:26
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	7:54	8:32	6:09	6:40
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	20:13	20:13	N/A	N/A
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	12:07	11:37	7:16	10:10
			N=9	N=4	N=1	N=3
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	22:17	22:17	N/A	N/A
			N=1	N=1	N=0	N=0
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all high/special risk technical rescue incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 12 minutes and 07 seconds. The first due unit is capable of providing 500 gallons of water and at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. This unit must have at least three personnel who are certified to SFD requirements. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all high/special risk fire incidents, the total response time for the arrival of the ERF, staffed with 6 firefighters and 3 officers (considered one engine, one ladder, one medic unit, and one battalion chief), is 22 minutes and 17 seconds. Engines will be capable of providing 500 gallons of water, at least a 1250gpm pump, and a basic assortment of rescue tools including ropes, throw bags/lifejackets, and tools. The ladders will be capable of having hydraulic extrication tools, stabilization equipment,

rope rescue bags, and a variety of technical rescue tools. The medic unit will be equipped with a full complement of ALS equipment. Engine/ladder personnel must be certified to at least EMTB and medic units must have at least one member that is certified to the level of Paramedic. All members must be certified to SFD requirements. An ERF will be capable of establishing incident command and requesting additional units, providing patient care, extrication, and providing a safe secure scene. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

### ***HAZMAT Responses and Baseline Times***

Station	Total	2015	2016	2017
1	50	12	23	15
2	36	10	11	15
3	39	16	10	13
4	38	15	8	15
5	35	10	12	13
6	44	10	15	19

Table 2526: This table and bar graph show the total number of HAZMAT incidents from 2015 to 2017.

There is not enough data to have a valid baseline performance for events requiring a moderate ERF or above; therefore, the department will focus on low risk events. The majority of those events are gas meter leaks requiring a single engine. The table below represents the times associated with events that occurred from 2015 to 2017. The data

filters that were used to obtain the times listed for baseline performance were calls that fell under the following NFIRS codes:

1. Hazardous conditions
2. Combustible/flammable gas/liquid condition, other
3. Gasoline or other flammable liquid spill
4. Gas leak (Natural Gas)
5. Oil or other noncombustible liquid spill
6. Chemical hazard (No spill or leak)
7. Chemical spill or leak
8. Refrigeration leak
9. Carbon monoxide incident
10. Biological hazard, confirmed or suspected
11. Accident, potential accident, other

Other data filters used included: incidents requiring emergency responses and incidents located within the city.

Due to the limited number of HAZMAT responses over the past three years and the wide array of call types and various resources required for any given HAZMAT incident, the department cannot consider all response time components accurate.

*Table 2627: The following 3 tables show the effective response force times for all risk levels of HAZMAT incidents from 2015 to 2017.*

(Low Risk) HAZMAT - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	1:50	1:52	1:22	1:49
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:56	2:02	1:53	1:33
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	7:49	7:45	5:33	8:22
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	7:49	7:45	5:33	8:22
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	9:06	9:03	7:44	10:23
			n=95	n=56	n=18	n=20
		Rural	N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	9:06	9:03	7:44	10:23
			n=95	n=56	n=18	n=20
		Rural	N/A	N/A	N/A	N/A

For 90% of all low risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 9 minutes and 06 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all low risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 2 firefighters and 1 officer, is 9 minutes and 6 seconds. The ERF is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

Moderate Risk HAZMAT - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
Alarm Handling	Pick-up to Dispatch	Urban	1:23	0:23	1:29	N/A
		Rural	N/A	N/A	N/A	N/A
Turnout Time	Turnout Time 1st Unit	Urban	1:39	1:14	1:39	N/A
		Rural	N/A	N/A	N/A	N/A
Travel Time	Travel Time 1st Unit Distribution	Urban	8:07	1:59	8:50	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	11:23	12:06	8:32	N/A
		Rural	N/A	N/A	N/A	N/A
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	10:28	3:36	10:28	N/A
			n=6	n=1	n=5	n=0
		Rural	N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	13:15	13:54	10:41	0:00
			n=2	n=1	n=1	n=0
		Rural	N/A	N/A	N/A	N/A

For 90% of all moderate risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 10 minutes and 28 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all moderate risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 4 firefighters and 1 officer (one engine/ladder and one medic), is 13 minutes and 15 seconds. The engine is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The medic is capable of providing ALS equipment. The engine/ladder must have at least three personnel who are certified to SFD requirements and hazmat operations. The medic must have one person who is certified as a paramedic, and one that is at least EMTB. These units will be capable of establishing command and requesting additional resources, and beginning hazard mitigation, patient care, and establishing a perimeter. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

Maximum Risk HAZMAT - 90th Percentile Times - Baseline Performance			2015-2017	2017	2016	2015
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	0:34	0:25	0:35	N/A
		Rural	N/A	N/A	N/A	N/A
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	1:21	0:58	1:25	N/A
		Rural	N/A	N/A	N/A	N/A
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Urban	5:20	4:20	4:50	N/A
		Rural	N/A	N/A	N/A	N/A
	Travel Time ERF Concentration	Urban	6:18	0:00	6:18	N/A
		Rural	N/A	N/A	N/A	N/A
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene Distribution	Urban	6:49	5:42	6:27	N/A
			n=3	n=1	n=2	n=0
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A
	Total Response Time ERF Concentration	Urban	7:37	N/A	7:37	N/A
			n=1	n=0	n=1	n=0
		Rural	N/A	N/A	N/A	N/A
			N/A	N/A	N/A	N/A

For 90% of all maximum risk hazmat incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 6 minutes and 49 seconds. The first due unit is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. The unit must have at least three personnel who are certified to SFD requirements and hazmat operations. This unit will be capable of establishing command and requesting additional resources, and beginning hazard mitigation. These operations are done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

For 90% of all maximum risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 6 firefighters and 3 officers (one engine/ladder, Engine 3, one medic, and a battalion chief), is 7 minutes and 37 seconds. The engine/ladder is capable of providing at least 500 gallons of water, at least a 1250gpm pump, and a hazmat response bag and natural gas plugs. Engine 3 is capable of providing advanced monitoring equipment. The medic is capable of providing ALS equipment. The battalion chief is capable of providing command post equipment. The engine/ladder must have at least three personnel who are certified to SFD requirements and hazmat operations. Engine 3 must have at least three personnel, two must be certified to SFD requirements and hazmat technician and one to at least hazmat operations. The medic must have one person who is certified as a paramedic, and one that is at least EMTB. The battalion chief must be certified to SFD requirements. These units will be capable of establishing command and requesting additional resources, beginning hazard mitigation, patient care, research, decontamination, and establishing a perimeter. These operations are



done in accordance with department standard operating procedures while providing for the safety of responders and the general public.

\*SFD did not have any High/Special Risk incidents from 2015-2017\*

### ***Wildland Responses and Operations***

The department does not have any traditional wildland areas located within its jurisdiction. A better description would be to call the areas with more vegetation an agricultural/urban interface. There are small farms, pastures, and as some forested areas; but most of those areas are under 50 acres and are easily accessible with roads that can act as fire breaks. Most vegetation fires in Springdale occur on lawns and small pastures and are extinguished by the first due engine company and Brush 1, if needed. In the event of a large-scale fire, The Arkansas Forestry Commission is available to assist with a bulldozer and personnel, if requested. Due to the small size and amount of vegetation fires, all data that was collected was included in the Fire Operations section of this report, and measured against the first due Engine Company's response time. While varying weather patterns can increase the risk of a large event, it is not a major threat to the city.

### ***Aircraft Responses and Operations***

The department has not conducted any aircraft rescue operations in the past three years. However, it is still responsible for possible aircraft emergencies at The Springdale Municipal Airport as well as EMS standbys at the Northwest Arkansas Regional Airport (XNA) in Highfill, AR. Any actual emergencies involving an aircraft crash would be a high-risk situation and would at minimum require the current assignment of three engines, one ladder truck, one medic unit, and one battalion chief. The department does not have a facility located at The Springdale Municipal Airport, or a properly equipped Aircraft Rescue and Fire Fighting (ARFF) vehicle to respond within the NFPA and FAA standards for response. Engines responding to The Springdale Municipal Airport have on-board foam tanks, and a large foam surplus is kept at Station 1, if needed.

There are a variety of smaller personal aircrafts as well as private corporate jets that are currently housed at The Springdale Municipal Airport. There are small passenger flights that fly in and out of this airport, however, they usually carry no more than 20 passengers and there is no large commercial carrier traffic. In the future, as the city is looking to improve the Springdale Municipal Airport and increase the number of flights, an ARFF vehicle will have to be considered. An ARFF vehicle would enable the department to provide the fastest and most qualified service for aircraft passengers.

### ***Marine and Shipboard***

The department has little to no risk of marine and shipboard firefighting; therefore, it does not train or have any response standards set for this type of operation.

## Summary of Response Times

The importance of monitoring and analyzing the fractal response times throughout the year and comparing them with past history cannot be emphasized enough. The department is attempting to reach benchmark goals set forth by the community. And, in order to do so, the department must be able to analyze each unit individually and determine if one unit or station is the cause of increased times. Once the cause is identified, a plan can be developed to improve response times. With the new ImageTrend™ reporting software, we will be able to better identify these negative trends and develop plans to eliminate them.

The times in the tables on pages 128-138 represent a starting point for the department to begin to develop these plans. By establishing this "baseline" and communicating it to all members of the department and the city, an expectation is set and both groups can work to identify what needs to be done to improve deficient areas. Whether it is methods and equipment to improve turnout times; identifying traffic patterns and alternative routes during higher traffic periods; or adding personnel, equipment or stations; the partnership between the city and the department will be able to work together towards meeting or exceeding the "benchmark" goals.

Overall, the department is showing improvement in many of the categories. In addition, once a method of accountability is better established and communicated, the expectation will be that great improvement will be seen in response times. Alternatively, the department will at least be able to recognize the cause of response delays and work towards improving those areas. The goal moving forward will be for units to always be improving from the baseline times and striving for the benchmarks set forth by the city and its leaders.

## Availability and Reliability

Another factor that is important in determining standards of cover is looking at the availability of units to respond to calls within their FMA. Availability is the amount of time a unit is available to respond to an emergency within its own service area. The causes for decreased availability are responding to other incidents, being out of service for administrative reasons, attending a public education event, or vehicle maintenance. Availability is measured by taking the number of incidents that units stationed within a FMA responded to as the first due unit and dividing it by the total incidents (workload) within a FMA. The final number is the percent availability of units in a FMA.

	E1	E2	E3	E4	E5	L6	M2	M3	M4	M5
2015	88.7%	86.3%	87.5%	92.7%	87.2%	88.3%	N/A*	N/A*	78.6%	84.8%
2016	92.5%	93.9%	91.6%	93.6%	91.8%	88.9%	84.4%	87.7%	93.1%	88.0%
2017	94.2%	89.6%	88.2%	93.9%	91.3%	85.4%	81.4%	85.2%	82.9%	85.6%
Total	91.9%	89.5%	89.0%	93.4%	90.2%	87.5%	65.6%*	69.7%*	81.7%	86.1%

Table 2728: This table shows the availability by unit from 2015 to 2017. Medic units are lower due to responding to multiple FMA's. M2 and M3 2015 data is not accurate due to moving those apparatus in middle of year.

## Performance Measures

What “triggers” a new fire station as an area grows? What is clear to almost any community is that an area being out of range of the response standard alone does not justify a new facility. Experience in the fire service has shown that it takes a multiplicity of standards of coverage factors to be out-of-balance. In addition, economic resources must be available to substantiate an additional paid company or increase staffing of one or more companies. One way to identify the variables and decision points when deciding if additional fire stations and/or staffing are needed would be to place them into a matrix to determine if an out-of-balance situation exists. The following matrix is used to determine if a new fire station or company needs to be added to infill areas as well as future development or annexes. It is important to anticipate the needs of the city and the department with good planning for both physical and financial needs because of the lengthy process to build, equip, and staff a new fire station. It can take one and a half to three years to acquire property, design and construct a new fire station, purchase needed apparatus, and hire new personnel.

### *Performance Measure Thresholds and Trigger Points*

#### Identify Risks

Choices	Occupancy Use	Wildland	EMS	HAZMAT
<b>Maintain Status Quo</b>	New area has less than 25% of same occupancy risk as existing area	New area has less than 25% of same wildland risk as existing area	New area has less than 25% of same EMS risk as existing area	New area has less than 25% of same HAZMAT risk as existing area
<b>Temporary Station and/or Staffing Needed</b>	New area has 25% of same occupancy as existing area	New area has 25% of same wildland risk as existing area	New area has 25% of same EMS risk as existing area	New area has 25% of same HAZMAT risk as existing area
<b>Permanent Station and Staffing Required</b>	New area has 35% of same occupancy risk as existing area	New area has 35% of same wildland risk as existing area	New area has 35% of same EMS risk as existing area	New area has 35% of same HAZMAT risk as existing area
<b>Permanent Station and Staffing Essential</b>	New area has 35% of same occupancy risk as existing area	New area has 50% of same wildland risk as existing area	New area has 50% of same EMS risk as existing area	New area has 50% of same HAZMAT risk as existing area

With the increase in construction within the city limits, it is safe to say that occupancy risk is currently increasing and will continue to increase in the future. Population has grown by nearly 30,000 in the past ten years which has brought with it additional commercial and residential occupancies. Although fire safety measures are constantly improving in new construction and remodels, the increase in population and building density increases the likelihood of an emergency event. Wildland/urban interface is increasing because residential and commercial property is being constructed in many areas that were once forests and open fields. While this development decreases the chance for a large-scale wildland incident involving large acreage, the increased chance for loss of life or personal property makes for a higher risk.

EMS risk has slightly decreased due to the department reducing its ambulance response area to within the Springdale city limits causing an overall decrease in EMS call volume. However, overall call volume, for all calls types, in each FMA is on the rise and within the next three to five years, it is anticipated that the department will eclipse 2015 total call numbers. The increase in population and development within the city increases the possibility for a variety of HAZMAT threats. Increased traffic on the roadways and newly constructed highways increase the potential for vehicles carrying hazardous materials through the city. Newer commercial and manufacturing facilities in industrial parks and other areas of the city also increase the risk for a HAZMAT incident.

### Concentration

Choices	Distances	Response Time	% of Calls	# Calls for Service
<b>Maintain Status Quo</b>	New area has less than 25% of parcels developed	Service Population of 0-1,250	Firefighters per thousand less than 1.1	8 minutes travel time 90% of the time
<b>Temporary Station and/or Staffing Needed</b>	New area has more than 25% of parcels developed	Service Population of 1,250-3,750	Firefighters per thousand less than 1.2	Exceeds 8 minutes travel time 10% of the time but never exceeds 9 minutes
<b>Permanent Station and Staffing Required</b>	New area has more than 35% of parcels developed	Service Population of 3,750-6,250	Firefighters per thousand less than 1.3	Exceeds 8 minutes travel time 20-25% of the time. Some calls exceed 9 minutes

<b>Permanent Station and Staffing <i>Essential</i></b>	New area has more than 50% of parcels developed	Service Population exceeds 6,250	Firefighters per thousand exceeds 1.3	Exceeds 8 minutes travel time 30% of the time. Some Calls exceed 10 minutes
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As stated in the previous matrix, the city has seen a significant increase in the number of developed parcels within the last 15 years. Although there was a mild slump from 2008 from 2013, homes are being occupied faster than they can be built. In addition, areas of the city that were once undeveloped farmland are now becoming large retail developments. All six fire stations currently exceed the service population, but Stations 4 and 5 have almost twice the limit of 6,250. Overall, firefighter per capita is nearly 2.1, which is well above the maximum of 1.3 that would require additional stations and workers. There are many areas of the city that far exceed the 10-minute travel time and the frequency of calls in those areas continues to increase. The department's overall travel times exceed 8 minutes 11.7 percent of the time.

### Distribution

Choices	Distances	Response Time	% of Calls	# Calls for Service
<b>Maintain Status Quo</b>	Response Area within 1.5 miles	4 minutes travel 90% of the time	100% in district	Out-of-District area has 0-100 calls for service
<b>Temporary Station and/or Staffing Needed</b>	Response Area within 2.0 miles	Exceeds 4 minutes travel time 10% of the time but never exceeds 8 minutes	More than 10% of calls out of District	Out-of-District Area has 100-300 calls for service
<b>Permanent Station and Staffing Required</b>	Response area within 2.5 miles	Exceeds 4 minutes travel time 20-25% of the time. Some calls exceed 8 minutes	More than 20-25% of calls are out of district	Out-of-District Area has 300-500 calls for service
<b>Permanent Station and Staffing Essential</b>	Response are within 3.0 miles	Exceeds 4 minutes travel time 30% of the time. Some calls exceed 10 minutes	More than 30% of calls are out of district	Out-of-District Area exceeds 500 calls for service

All of the stations except for Station 2 have response areas that meet or exceed the three mile standard. Stations 4 and 3 are the worst at 4.78 and 3.11 miles respectively.



Unit	Percent of Calls Out of District	Number of Calls Outside of District	Farthest Response Travel in Miles
E1	17%	1,079	3.05
E2	21%	945	1.40
E3	14%	516	3.11
E4	16%	750	4.78
E5	8%	341	2.99
L6	15%	707	2.58

Table 28-29: This table shows each unit's responses out of district and travel distance for the chart above.

## Key Findings

This report is to be used as a tool to be used by both the department and the city leaders. If utilized, it will aid in the decision making process for future growth as well as help identifying and improve current deficiencies. Through analyzing the data that is available to the department, we have been able to identify strengths, weaknesses, opportunities, and threats to providing the best service to the citizens of Springdale. That being said, the quality of the information being provided is very important. By utilizing a "Garbage in, Garbage out" philosophy to collect only the most pertinent, relevant, and important data and filter out unneeded, irrelevant, or improper/skewed data; we are able to provide only the information that is most pertinent to the department and the city, and will affect the citizens of Springdale. Through this process, the department has been able to identify data collection deficiencies and is developing plans and processes to improve them as soon as possible. Listed below are some of the key findings that have been discovered since data collection and writing this report began.

1. The citizens of Springdale stated what they expect of the department and its response times in the strategic planning meetings that were hosted by the department. With the six stations that the department currently staffs, there are areas throughout the city that do not meet those expectations. The most obvious and beneficial solution for the city and the department is additional stations and personnel in those areas where response times are the worst. Additional stations and personnel would allow for progress towards a similar delivery of service throughout the entire City. Until additional stations and personnel is a reality, the department must work with City leaders and Citizens to develop and implement acceptable response times for both first due and effective response force units and personnel. These acceptable response times must be communicated to all the citizens so the level of service is known prior to a need for the service. When acceptable response times are not met, the department must develop a method for tracking the causes of delay. In addition, in the future, address and eliminate those causes to the best of its abilities.
2. Due to the limited number of maximum and higher risk emergencies the department responds to in a calendar year, proper collection of response time data is crucial to

determining if the department is meeting the concentration and distribution needs of the city. Analysis of the current data revealed several instances where data is not in line with similar incidents, and there is no known cause for the skewed data. There are several reasons this could be possible including: dispatcher error due to having to manually log the times; firefighter error due to radio traffic not being heard, not calling on-scene or responding at all. Another reason could be lack of data input in reporting software, although this has been addressed in mid-2017. There are at least two solutions that could eliminate some of the errors occurring with data collection and increased response times. One would be to install some type of Mobile Data Terminal (MDT) that would allow times to be collected without having to manually enter the times; this would also decrease radio traffic and the possibility of unit's radio traffic being "doubled". An Automatic Vehicle Locator Systems (AVL) would dispatch the closest units rather than automatically dispatching the unit assigned to a particular address. This system would allow for faster response times and less radio traffic from units changing assignments. This would also prevent some of the errors in collecting times in the Computer Aided Dispatch (CAD) system. The CAD system functions properly; however, the system is antiquated and does not utilize technological features that are currently available. An improved CAD system or a new dispatching system program would allow the city and the department to better utilize the latest technology available while providing an improved service to the citizens.

3. During the incident report writing process, staff members need to be more vigilant in identifying discrepancies on call times and determining the cause of the discrepancy. As a last resort, the person who is doing the report Quality Control (QC) review should identify discrepancies and discuss them with the crews involved as well as the person responsible for writing the report. The report narrative should include documentation explaining the cause of the discrepancy. In addition, the department should establish a method of identifying the cause of the discrepancy, capturing that data so major causes can be identified, and then fixing those errors in a timely manner so that the most accurate data is collected. If data collection issues are only addressed when compiling data for reports it will make it more difficult to identify and correct behaviors that cause discrepancies. It has also been discovered that crews are downgraded from emergency response mode to non-emergent; however, the incident report does not reflect the downgrade, which is causing extended emergent response times to be reported. Again, this is where diligence with the QC process is so important. It might also be beneficial to re-train the crews or create a written policy or guideline to properly report these instances.
4. The department has not kept an accurate history of major operational changes such as changing the amount of units assigned to an incident. This can lead to misinterpretation of the collected data. Without an established method of recording this information, it is difficult to validate certain parts of the data. Moving forward, the department will keep a more accurate account of any operational or organizational changes.

5. Information on high-risk areas within the city has traditionally been passed down from seasoned firefighters to newer members. With the introduction of the new Risk Assessment program in 2015/2016, a program has been established that will allow the department to take an analytical approach to our responses to specific types of incidents within higher risk areas. Through this process, we have been able to identify areas of deficiency in establishing a quality risk assessment and developing a game plan to improve on the assessment as needed. The Risk Assessment/Standard of Cover document must be reevaluated consistently to ensure that it meets the needs of the department.
6. Not all areas of a FMA have the same type of businesses, industry or residential areas throughout. Breaking FMA's down into smaller zones or districts that are more manageable allows for a more detailed look at different areas within a given FMA. SFD will work with the city's Planning Department and the GIS technician to develop quality maps of risk areas based on historical data and department personnel input. The department plans to utilize the information that it has obtained through the latest risk assessment to better identify high-risk structures, areas, and incident types and create predetermined assignments for most of them. This goal will be easier to obtain going forward with some of the newer technology that is available in the new ImageTrend™ reporting software and ImageTrend Elite™ software. The department will need to develop a better method of consistent scoring for target hazards to ensure that hazards are being evaluated by personnel who have knowledge of the hazard and what challenges it may present.
7. While doing the latest risk assessment, it was discovered that there needs to be a reliable method of determining risk that can be utilized in the consistently across all three shifts. The use of Heron's Formula was excellent in categorizing known risks; however, this was a new endeavor for the crews so there were some discrepancies between the shifts. While reviewing reports and narratives associated with the risk assessment, classification of calls according to The National Fire Incident Reporting System (NFIRS) was found to be deficient or inconsistent on several occasions. Inconsistent data classification should be alleviated with time and training.
8. Effective Response Force (ERF) times are being affected by Battalion 1 on a large number of incidents. The role of an incident commander is vital to all incidents especially those moderate and major incidents. While an officer from a responding unit covers the incident commander's role until Battalion 1 arrives on scene, other on-scene roles and tasks are being delayed. National Incident Management System (NIMS) states that the appropriate span of control is between three and seven personnel per one supervisor with one to five being an optimal ratio. Battalion 1 currently supervises seven Captains. With extended drive times to outlying parts of the city and an on-call system for a back-up Battalion Chief if needed, an ideal situation would be to have two on-duty Battalion Chiefs. This would achieve the best distribution and concentration.

This has been corrected as of Sept. 2017, and the data has been adjusted to reflect those changes.

9. The department has added a third engine to the assignment to act as the Rapid Intervention Team (RIT) on all structure fires. This was done after the community standards for response times were established in The Strategic Planning meetings. This change has led to increased Effective Response Force (ERF) times because the third engine usually has to cross one or more FMA's to get to the scene of an incident. The RIT assignment also delays the completion of other on-scene tasks because of OSHA's two in/2 out rule. That rule requires a crew to be outside at the ready before entry is made into a fire. However, the RIT is crucial to the safety of on-scene firefighters and cannot be removed from the ERF. Two possible solutions to prevent either not meeting the ERF times are to increase the times allotted for ERF or adding personnel to units and/or stations or units to better cover the areas. Adding to acceptable ERF times is method that not only puts the citizens in danger, but firefighters as well due to a higher potential for flashover in a fire.
10. Due to increases in call volume over the past 15 years, the department and the city must be proactive in assigning the proper number of units to each level of call: low, medium, and high. One way that this can be obtained is by more efficiently utilizing the Priority Dispatch® system that we currently have in place. This will allow us to send single units to Alpha, Bravo, and Omega level medical calls which will leave the engine units in service to respond in case of overlapping calls. The department has not utilized Priority Dispatch® on other types of calls (fire, HAZMAT, or rescue) and would benefit from implementing it in those areas as well. There has not been a reliable method of tracking overlapping calls by unit and FMA until the conversion to ImageTrend™ software, so historical data has been unreliable but the department's data will only improve going forward.
11. The department traditionally has not had a standardized method for collecting, analyzing, and disseminating data associated with call response times. As the department moves through the accreditation process, it will be able to better utilize its ImageTrend™ software to create a simplified report that better suits for the department's needs. The department will then be able to collect and disseminate accurate information to all its members. Standards can be set as well as evaluated, and a reliable method of documenting the causes of response time goal failures can be established. Once those causes are determined and documented, the department will be able to determine if those causes were preventable. If preventable goals are not met due to something that is within the responding unit's control, consequences for failure must be implemented. The department has implemented Stats FD software in September 2017 for data analysis and has been able to calculate and disseminate information appropriately.

## Maintenance of Effort and Ensuring Compliance

The department is progressing in its efforts to collect appropriate data and utilize it to its maximum potential. The department has recently converted all aspects of Fire, EMS, Training, Inspections, and Inventory to ImageTrend™ reporting software. There is far more potential with the data collected using ImageTrend™ as compared with the older *Firehouse RMS*® software that the department had been using. At the end of 2016, the new ImageTrend Elite™ version was placed into service, and the department has the ability to capture even more data sets. The department is also working to ensure that updates to the CAD system, which will further aid in data collection and tracking, are implemented in a timely manner. Once sufficient data has been collected in the ImageTrend™ software, department personnel will be able to generate pre-configured reports with up-to-the-minute data. Those reports can be used to evaluate all criteria, which will assist department personnel in updating The Risk Assessment Standards of Cover report as well as simplify re-accreditation. Going forward, the department will work with senior staff and officers to implement an evaluation process that best suits the needs of the city and the department. This information will be disseminated to all members, and consequences for failure to meet expressed performance measures without reason will be implemented.

The department has implemented a Captain/ Accreditation Manager position to ensure that the standards of cover goals are being met. The Accreditation Manager will also use the evaluation matrix to disseminate information, as needed, to the appropriate department supervisors so they can work with city officials to choose the best course of action to improve the department's services. The Standards of Cover will be evaluated annually to update any major changes that need to be addressed, and every five years, it will be re-written.

The department will utilize the six-step Commission on Fire Accreditation (CFAI) compliance model, illustrated below, to ensure compliance with the goals and expectations set forth in this document.



Table 33: This table illustrates the CFAI performance compliance model.

### Phase 1

Establish or Review Performance Measures:

- Identify what performance measure will be monitored and how often they will be reviewed internally vs. externally.

### Phase 2



**Evaluate Performance:**

- Evaluate performance as part of an ongoing quality assurance program to ensure organizational compliance against the performance measures.

**Phase 3****Develop Compliance Strategies:**

- Immediate action items to close the gaps in particular catchment areas.
- Resources that can be/should be reallocated.
- Alternative methods to provide service at the desired level.
- Budget estimates as necessary while considering the cost - benefit.
- Maximization of existing resources.
- Develop a plan of action.

**Phase 4****Communicate Expectations to the Organization:**

- Provide appropriate levels of training/direction for all affected personnel.
- Explain the method of measuring compliance to personnel who are expected to perform the services.
- Provide feedback mechanisms.
- Communicate consequences for noncompliance.
- Empower personnel within the organization to identify the need to modify processes as necessary to comply should there be a conflict with new methods.

**Phase 5****Validate Compliance:**

- Develop and deploy verification tools and or techniques which can be used by the organization on an ongoing basis to verify compliance of the measures.
- Review of the performance by company vs. overall performance.

**Phase 6****Make Adjustments and Repeat the Process:**

- It is necessary to review changes to ensure service levels have been maintained or improved.
- Adjustments will be made as the need arises on a continuous basis.

***Compliance***

The accreditation manager will collect monthly data regarding: response times, call volume, and availability. This data will then be used to identify any deficiencies in data collection or any other areas including reporting processes and/or response times. The accreditation manager will then distribute any deficiency information to the appropriate department staff officers. Next, the staff officer will address the deficiencies with the personnel involved to determine if re-training is necessary or other methods of accountability are required. This information will be developed on a company, shift, and department level, as deemed necessary, and distributed to the citizens, city leaders and the department members via compliance reports. The department will utilize this information in its annual report. The department does plan to develop a Compliance Committee to help improve analysis of all the data collected as well as formulate a strategy for continued improvement. The department will also annually re-evaluate its data collection system and determine: if additional data needs to be collected and

flagged for review, what mandatory data should be collected, and if there is a need for improvement or re-training on data collection and entry.

(Continued on Next Page)

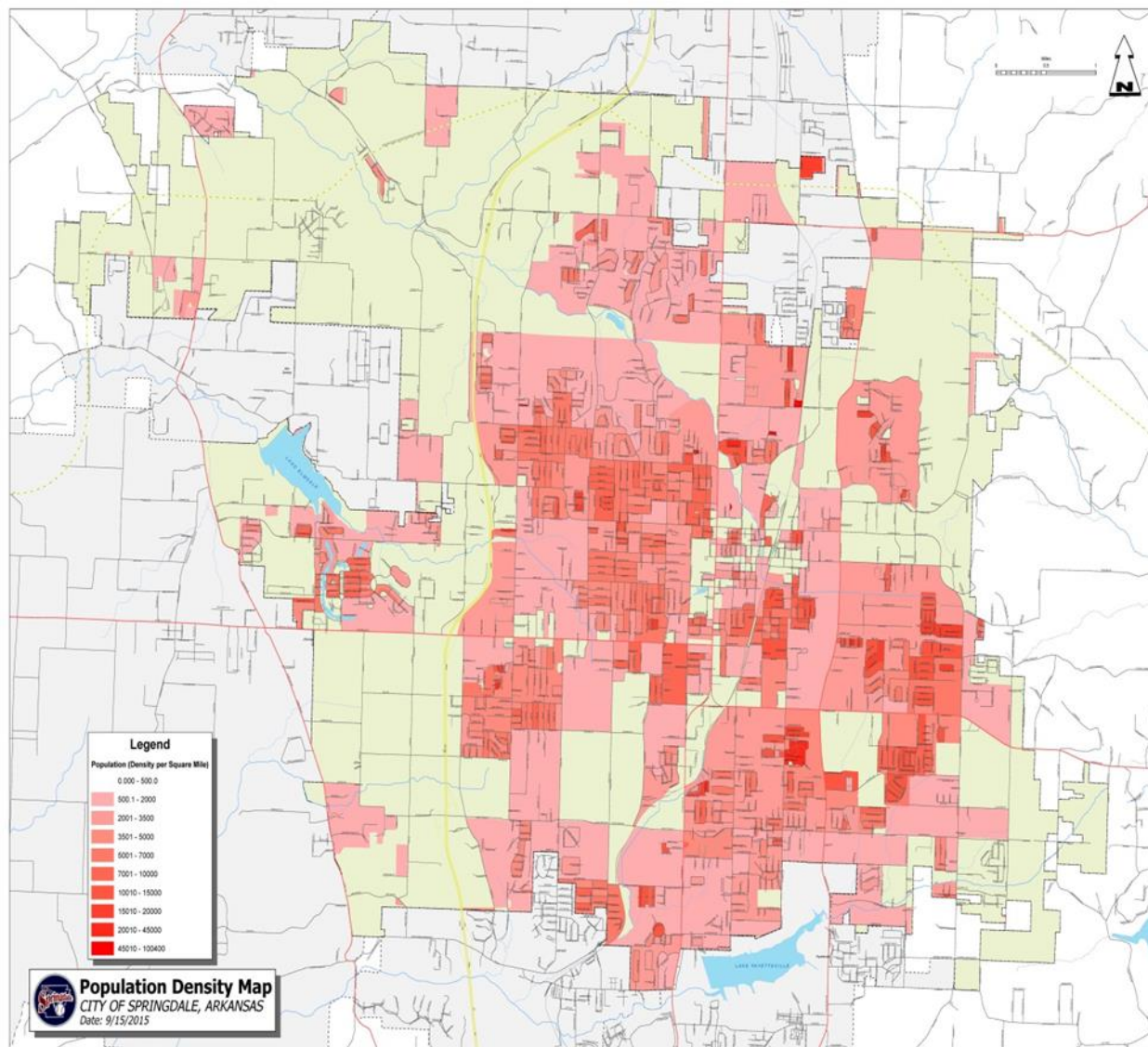


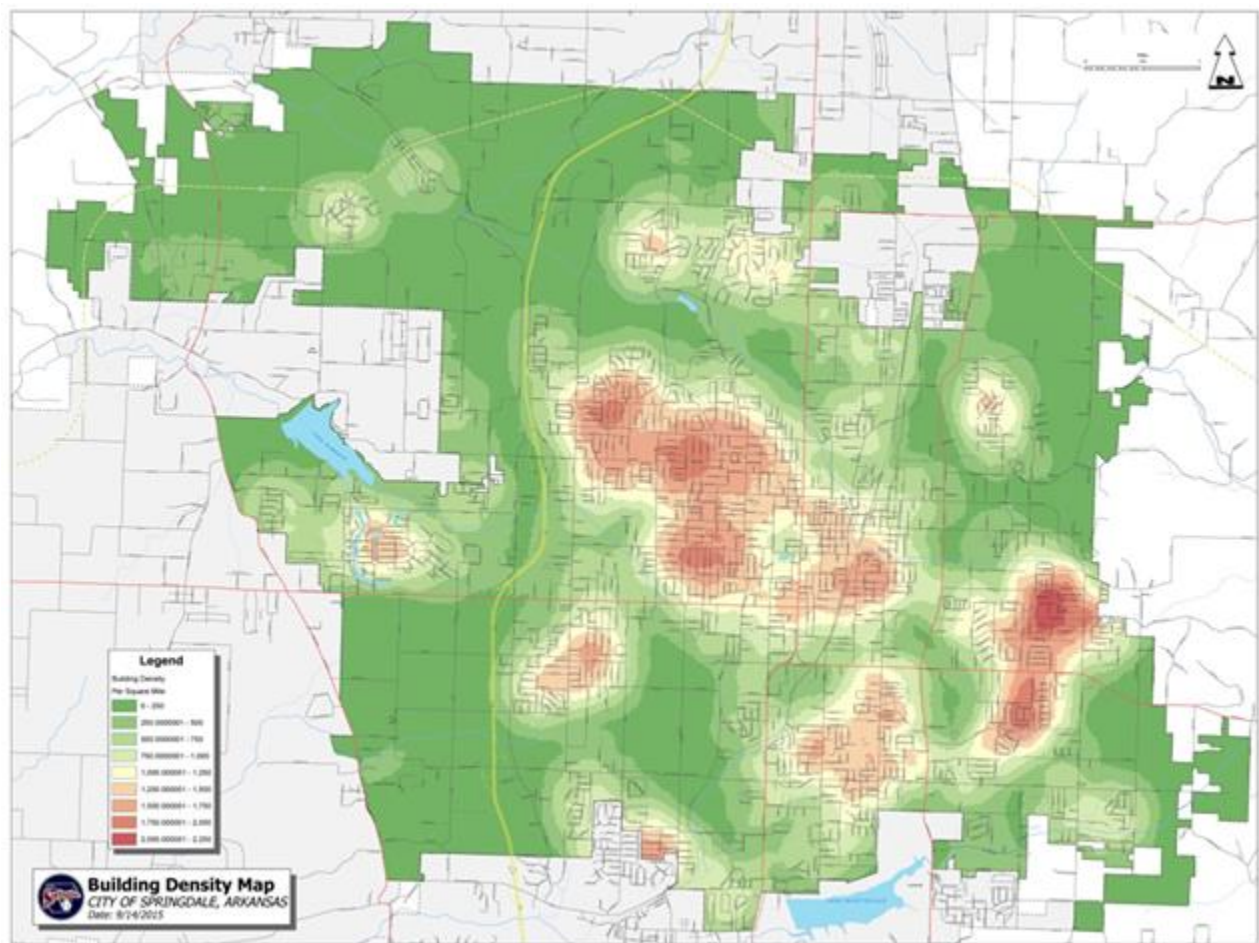
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## Appendix

### Appendix A

The following two City of Springdale maps are GIS population density and building density maps as of the 2010 Census. With rapid growth in the western and northwestern parts of the city, population density will most likely increase in areas that have traditionally been low density.



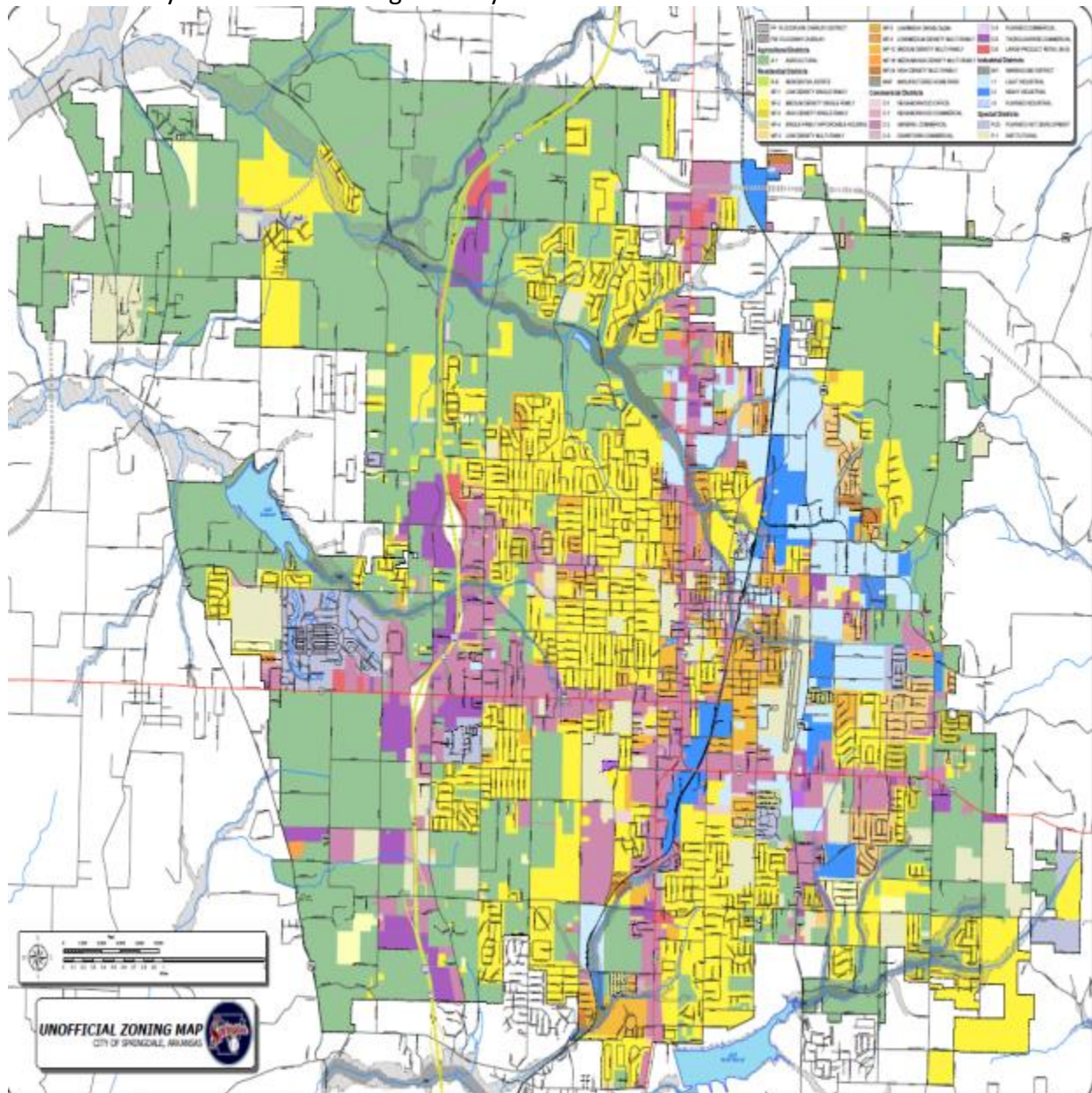


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## Appendix B

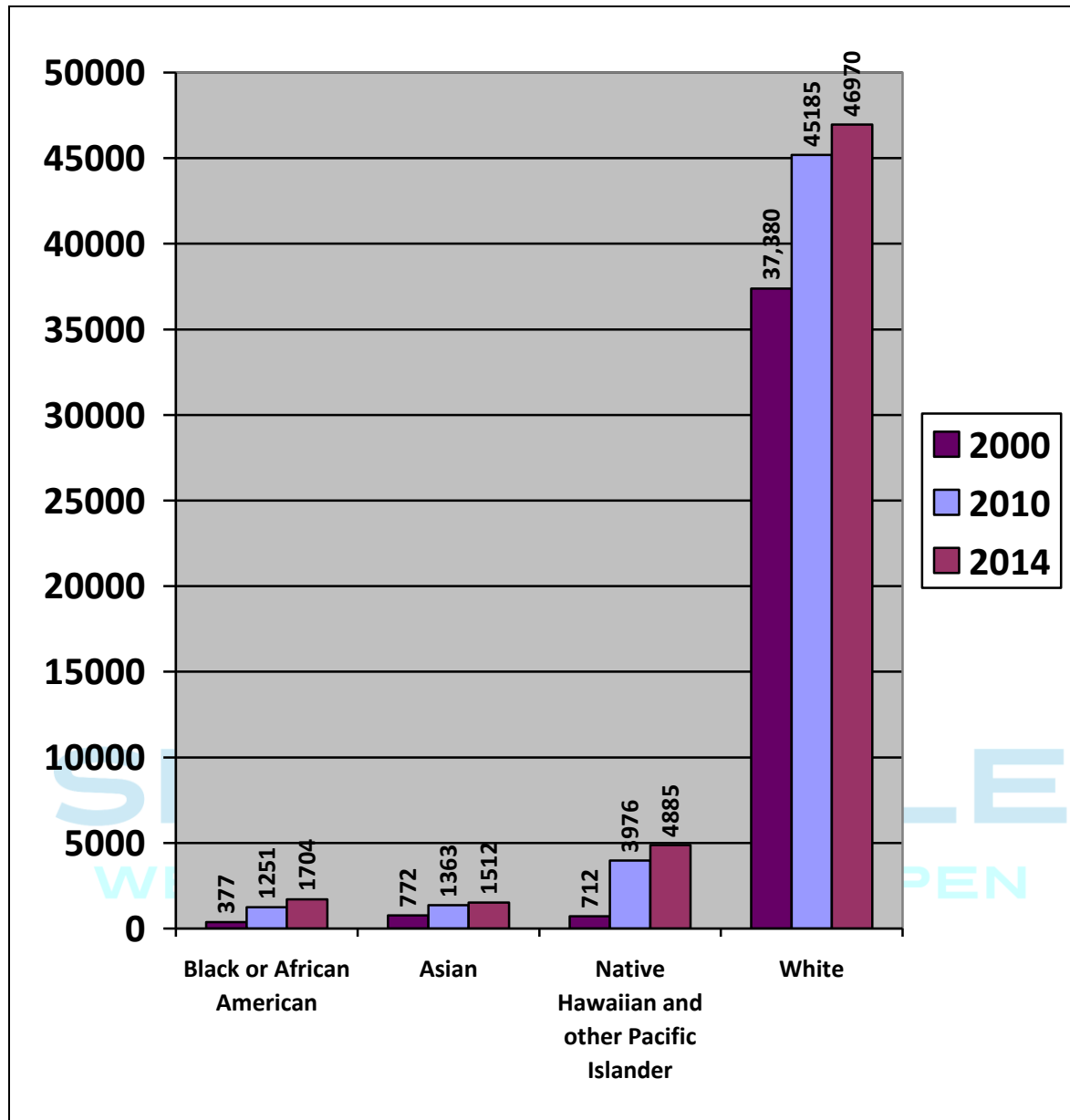
Pictured below is a zoning map for The City of Springdale. The large purple areas represent the commercial areas along Highway 71, Highway 412, and the overlay district. The blue areas are the city's industrial areas. The orange areas are multi-family residential and the yellow areas are single-family residential.



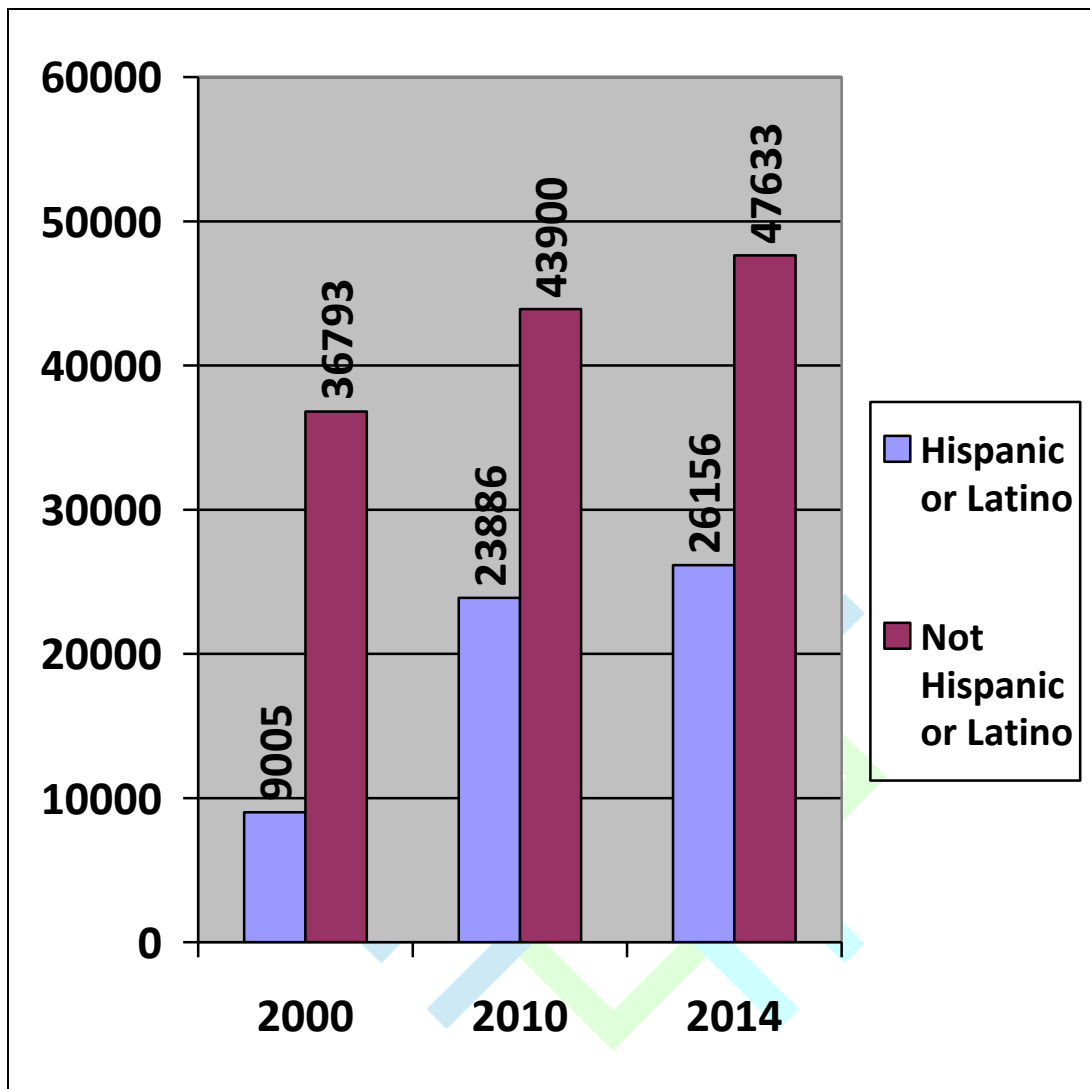


## Appendix C

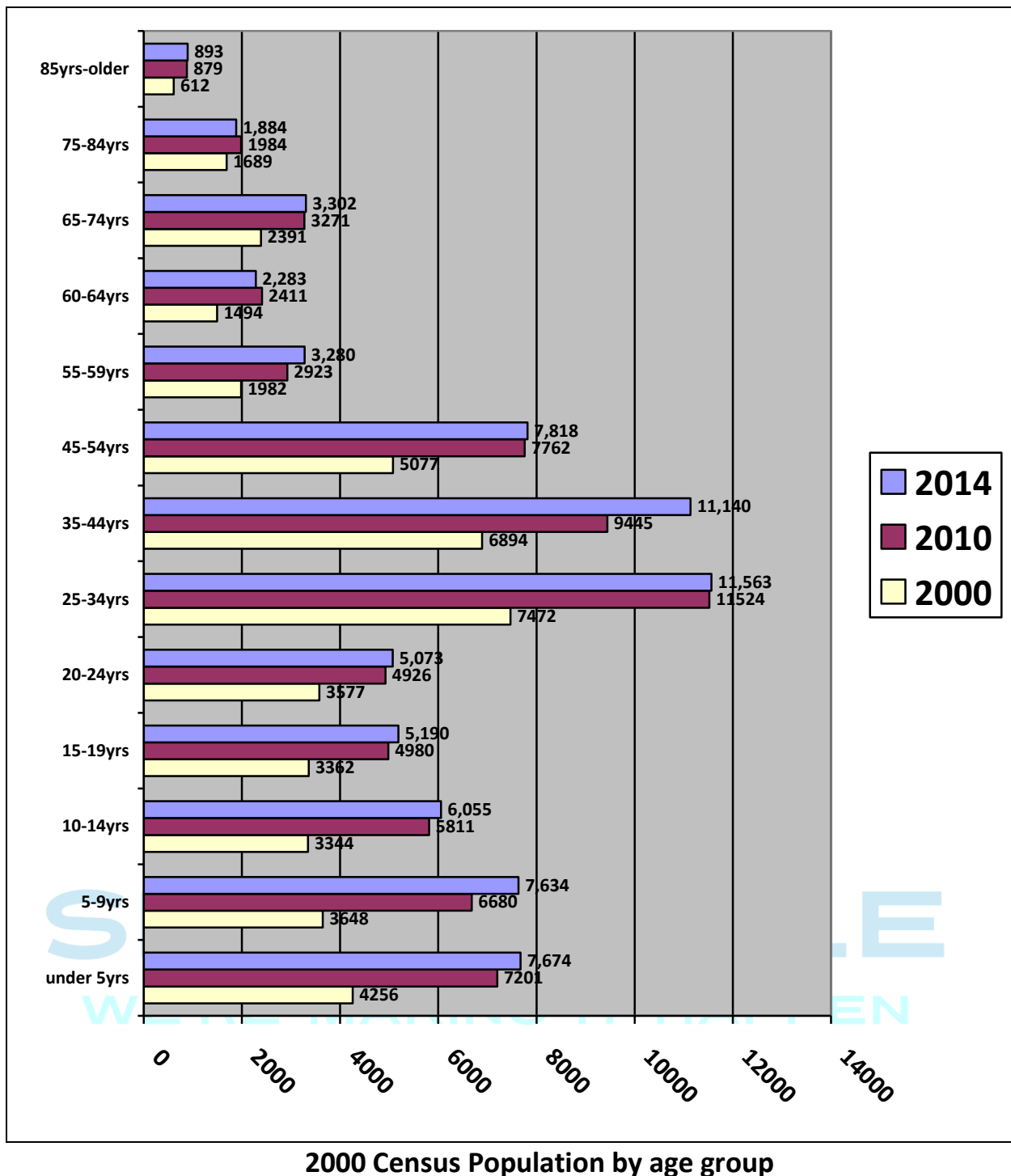
Pictured below are three charts showing the change in racial and ethnic backgrounds in the city since the 2000 Census. As you can see, the population has drastically increased since the 2000 Census.



Population Increases per Census by Ethnic Backgrounds

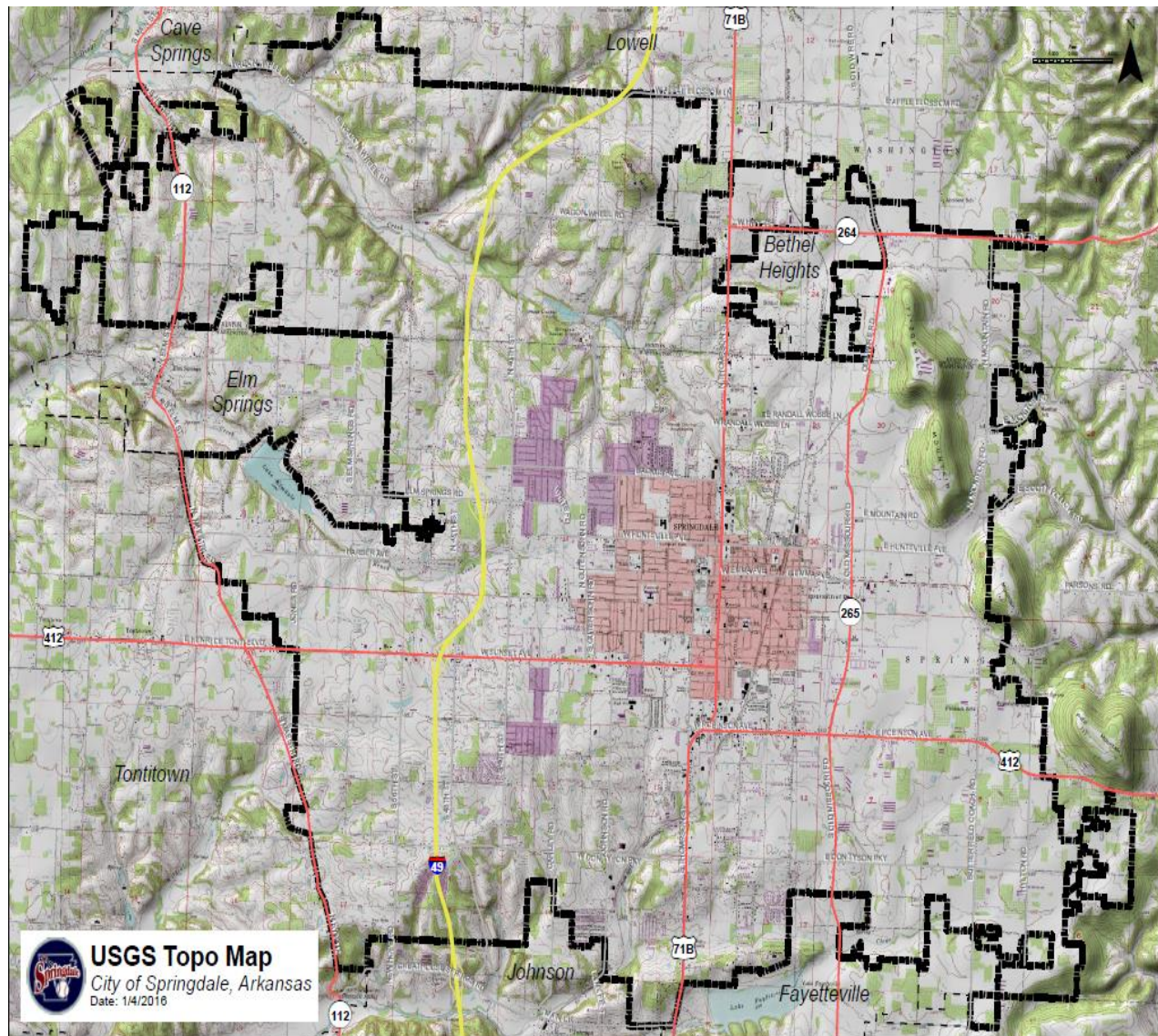


Population Increases per Census  
Hispanic or Latino vs. Not Hispanic or Latino



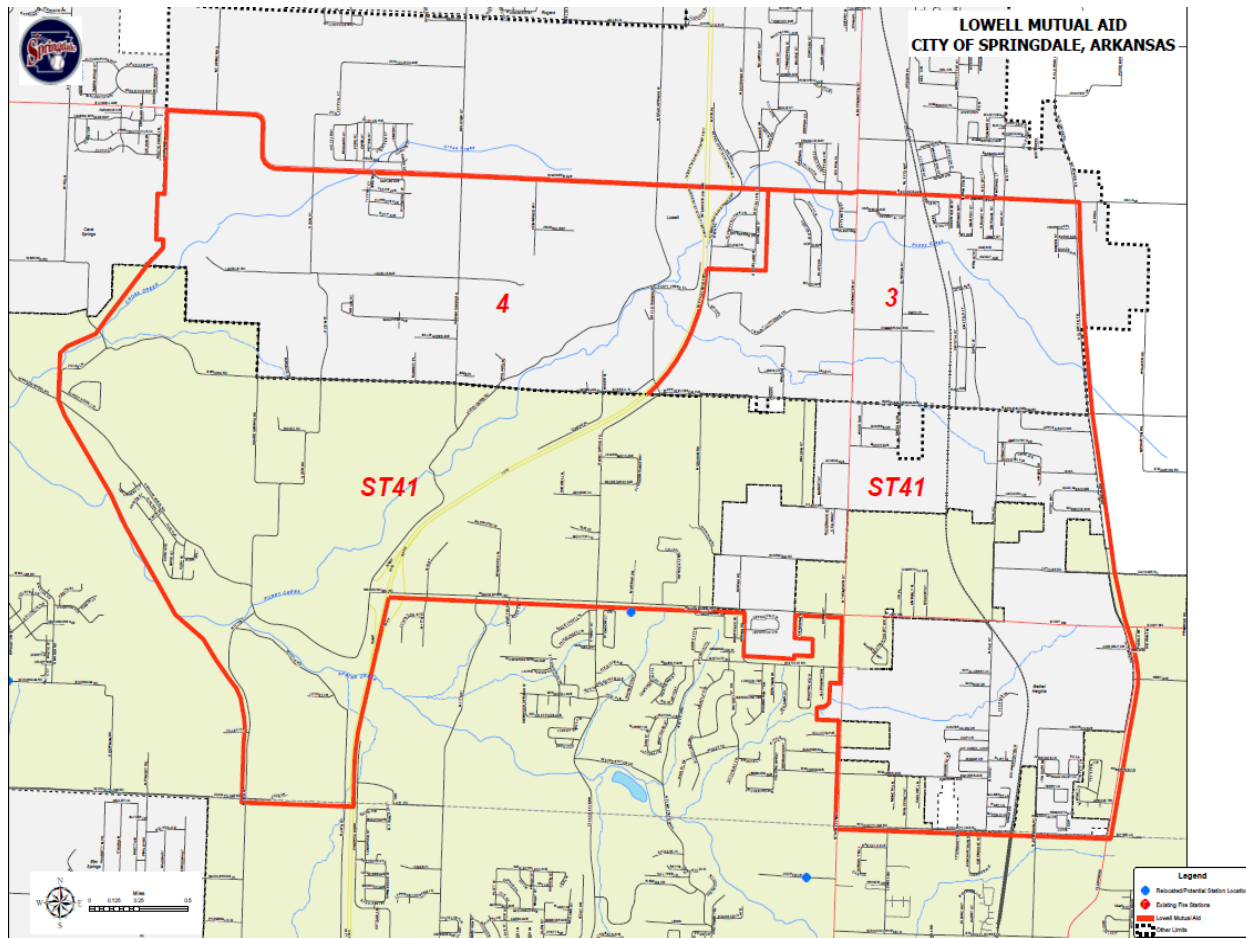
## Appendix D

Pictured below is a topographical map of The City of Springdale. There are very few extreme elevation changes within the city limits. The city is located just to the west of the Ozark Mountains in an area known as the Springdale Plateau. There are a few smaller mountains in the city. Callahan Mountain is located in the northern part of FMA 3; and Dodd, Fitzgerald, Webber, and Price Mountains help make the eastern border of the city.



## Appendix E

Pictured below is a map of the Springdale/Lowell automatic aid area. When a fire or large-scale incident occurs within this area, the station listed within the red border should be automatically dispatched to the incident. This has been utilized on occasion but with the antiquated dispatch CAD and separate dispatch centers, more often than not aid is not alerted.





**Appendix F**

<b>Fire Risk</b>	
<p><b>Moderate</b></p> <ul style="list-style-type: none"> <li>• Fire in structure other than building(vaults, fence, tents)</li> <li>• Cooking fire</li> <li>• Incenerator overload</li> <li>• Fuel Burner/Boiler Fire</li> <li>• Commercial compactor fire</li> <li>• Fire in portable building used as fixed structure</li> <li>• Aircraft standby</li> <li>• Commercial fire alarm</li> </ul> <p>ERF-2 Engines or Engine/Ladder</p>	<p><b>Maximum</b></p> <ul style="list-style-type: none"> <li>• Residential structure fire</li> <li>• Commercial structure fire</li> <li>• Chimney or flu fire</li> <li>• Fire in motorhome or RV used as a residence</li> <li>• Fire in a mobile property used as a fixed structure</li> <li>• Small aircraft fire</li> <li>• Forest fire greater than 50 acres</li> <li>• Munitions/Blasting Agent/Fireworks explosion</li> </ul> <p>ERF-3 Engines, 1 Ladder, 1 Medic Unit, 1 Battalion Chief</p>
<p><b>Low</b></p> <ul style="list-style-type: none"> <li>• Passenger vehicle fire</li> <li>• Road/Freight or transport vehicle fire</li> <li>• Water vehicle fire</li> <li>• Motor home or RV fire</li> <li>• Off Road vehicle or heavy equipment fire</li> <li>• Brush/Grass/Vegetation fire</li> <li>• Trash/Rubbish/Dumpster fire</li> <li>• Cultivated Crop/Vegetation fire</li> <li>• Overpressure rupture of boiler/steam/gas</li> <li>• *Controlled or illegal burning</li> <li>• *Heat from short circuit/wiring problems</li> <li>• Powerline down</li> <li>• Residential fire alarm</li> </ul> <p>ERF-Single Engine/Ladder Company</p>	<p><b>High/Special</b></p> <ul style="list-style-type: none"> <li>• Fire in Identified Target Hazard</li> <li>• Large Scale Natural or Artificial Disaster</li> <li>• Fire In Identified Target Hazard</li> <li>• Explosion in Residential/Commercial/Government Building</li> <li>• Wildland Fire Over 50 Acres</li> <li>• Train Collision, Derailment, or Fire</li> <li>• Suspicious Package/Explosives with Injuries</li> </ul> <p>ERF- 4 Engines, 2 Ladders, 1 Medic Unit, 1 Battalion Chief</p>

\*Constitutes non-emergent response

\*\*Additional time added to maximum special ERF time is 7 minutes to allow for alarm to be upgraded by first unit on scene

EMS Risk	
<p><b>Moderate</b></p> <ul style="list-style-type: none"> <li>Emergent lights and sirens EMS response with 1-4 patients</li> <li>Cardiac arrest</li> <li>Electrocution/Trapped by powerlines</li> <li>*Bomb scare</li> <li>*PD/SWAT request incidents w/ staging involved</li> </ul> <p>ERF-1 Engine and 1 Medic Unit</p>	<p><b>Maximum</b></p> <ul style="list-style-type: none"> <li>EMS incidents with 5-7 patients</li> </ul> <p>ERF-1 Engine and 2 Medic Units</p>
<p><b>Low</b></p> <ul style="list-style-type: none"> <li>Assist other EMS agency</li> <li>Emergency no lights and sirens EMS response</li> <li>EMS standby for hazardous condition</li> <li>Citizen assist</li> </ul> <p>ERF-Single Engine/Ladder/ Medic Unit</p>	<p><b>High/Special</b></p> <ul style="list-style-type: none"> <li>Mass casualty incident with 8 or more patients</li> <li>Natural disaster</li> </ul> <p>ERF-4 Engine/Ladders, 4 Medic Units, Battalion Chief</p>

\*Constitutes non-emergent response

\*\*Additional time added to maximum special ERF time is 7 minutes to allow for alarm to be upgraded by first unit on scene

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Technical Rescue	
<p>Moderate</p> <ul style="list-style-type: none"> <li>• Aircraft Rescue Standby</li> <li>• MVC with injuries 1-4 persons involved</li> <li>• MVC with unknown injuries</li> <li>• Vehicle vs. pedestrian MVC</li> </ul> <p>ERF-1 Engine/Ladder and 1 Medic Unit</p>	<p>Maximum</p> <ul style="list-style-type: none"> <li>• Extrication of victim from vehicle</li> <li>• MVC with 5 or more patients</li> <li>• Removal of victims from elevator</li> <li>• Extrication of victim from machinery</li> </ul> <p>1 Engine, 1 Ladder, Engine 2/Rescue 2, 1 Medic Unit, 1 Battalion Chief</p>
<p>Low</p> <ul style="list-style-type: none"> <li>• *Lock In/Lock Out</li> <li>• *Search for person on land, water, or underground</li> <li>• *Stalled elevator no injuries</li> <li>• Surf or watercraft rescue</li> <li>• *MVC single unit requested</li> <li>• Trapped by powerlines</li> </ul> <p>ERF-1 Engine/Ladder/Medic Unit</p>	<p>High/Special</p> <ul style="list-style-type: none"> <li>• Extrication of victims from building or structure such as building collapse</li> <li>• Trench/Below grade rescue</li> <li>• Confined space rescue</li> <li>• High-angle rescue</li> <li>• Swiftwater/Water/Ice rescue</li> <li>• Natural disaster</li> </ul> <p>2 Engines, 2 Ladders, Engine 2/Rescue 2, 3 Medic Units, 1 Battalion Chief</p>

\*Constitutes non-emergent response

\*\*Additional time added to maximum special ERF time is 7 minutes to allow for alarm to be upgraded by first unit on scene

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HAZMAT	
<p>Moderate</p> <ul style="list-style-type: none"> <li>• Overpressure rupture of high pressure gas line</li> <li>• Chemical spill or leak 5-20 gallons</li> <li>• LPG or NG leak commercial/high pressure</li> <li>• CO with occupants and/or illness</li> </ul> <p>EF-1 Engine/Ladder 1 Medic Unit</p>	<p>High</p> <ul style="list-style-type: none"> <li>• Fuel spill over 20 gallons</li> <li>• Chemical spill or leak 20-55 gallons and/or injuries</li> <li>• Large commercial LPG or NG leak</li> <li>• Chemical hazard with illness</li> <li>• Refrigeration leak/ ammonia w/ no injuries and no threat to surrounding area</li> <li>• Radiation leak/ radioactive material</li> <li>• Biological hazard confirmed or suspected</li> </ul> <p>ERF-1 Engine/Ladder, Engine 3, 1 Medic Unit, 1 Battalion Chief</p>
<p>Low</p> <ul style="list-style-type: none"> <li>• Fuel spill &lt; 20 gallons</li> <li>• Odor investigation</li> <li>• CO alarm</li> <li>• Overpressure rupture of low pressure gas line</li> <li>• LPG or NG leak residential/low pressure</li> <li>• Chemical hazard</li> <li>• Chemical spill or leak &lt; 5gallons</li> <li>• CO incident (no illness)</li> </ul> <p>ERF-1 Engine/Ladder</p>	<p>Maximum/Special</p> <ul style="list-style-type: none"> <li>• Oil or combustible liquid spill over 55 gallons</li> <li>• Chemical hazard mass casualty or in a large area</li> <li>• Chemical spill or leak with unstable or reactive explosives</li> <li>• Material with large area exposed and/or injuries</li> <li>• Refrigeration leak/ ammonia with injuries and/or threat to large area</li> <li>• Biological hazard confirmed or suspected</li> <li>• Mass casualty incident w/ possible hazardous materials</li> </ul> <p>ERF-1 Engine, 1 Ladder, Engine 3/HM3, 1 Medic Unit, 1 Battalion Chief</p>

\*Constitutes non-emergent response

\*\*Additional time added to maximum special ERF time is 7 minutes to allow for alarm to be upgraded by first unit on scene

This is a listing of the Priority Dispatch® codes that are assigned to calls. These codes help to determine the units to dispatch to an EMS call as well as the necessary response mode. Priority Dispatch® also offers codes for non-EMS related calls, but the department is currently not using those codes.

According to Principles of Emergency Medical Dispatch 4<sup>th</sup> Edition written by National Academy of Emergency Dispatch, the below definitions apply:

#### ALPHA RESPONSE:

A response level outlined in the protocol as sending the closet basic life support unit COLD.

**BRAVO RESPONSE:**

A response level outlined in the protocol as sending the closest basic life support unit HOT or COLD, depending on the situation.

**CHARLIE RESPONSE:**

A response level outlined in the protocol as sending the closest advanced life support unit COLD (or HOT), and basic life support transport COLD.

**DELTA RESPONSE:**

A maximum response level outlined in the protocol as sending both basic and advanced life support providers to the scene as fast as possible. Indicative of a critical trauma.

**ECHO RESPONSE:**

A maximum response level outlined in the protocol as sending the closest apparatus/personnel of any kind HOT. Indicative of imminent death situations.

**OMEGA RESPONSE:**

A response level outlined in the protocol for special referral and response, such as forwarding the call to a poison control center, nurse advice, or ombudsman program.



### Springdale Fire Department Policies & Procedures

Title: Standard Alarms

Volume: 5 – Fire Operations

Approved By: Fire Chief Mike Irwin

CFAI Reference: n\

CAAS Reference: n\

Policy Number: 501.1

Last Updated: November 2015

Created: December 2004

Formatted: March 2015

Dispatch personnel rely on caller provided information to identify different types of incidents. When this information is entered into the CAD system, standard alarms are prompted by the CAD. Shift Commanders are responsible to monitor assignments and determine whether the dispatched alarm is correct. It is the responsibility of the Shift Commander to correct alarms as indicated.

Shift Commanders and/or First Due Company Officers shall add or reduce assigned units to ensure appropriate personnel and equipment is assigned to the alarm as warranted by additional information obtained en-route or after arriving on scene. The first Officer to arrive on the scene should increase or decrease units, as well as upgrade or downgrade the response mode of units, as warranted.



Company Officers and Firefighters are responsible to be familiar with their FMA and AMA and shall respond to assignments in their areas. If an incorrect alarm has been dispatched, the correct unit shall advise dispatch they are responding and to cancel other incorrect unit(s).

Standard Alarms are as follows:

Alarm Terminology	Units and Staff Assigned	Resources
Still Alarm	<b>Single Companies</b> (Closest Fire Company, Medic, Brush or any combination of these); <b>Mutual Aid Fire Response</b> – Closest Fire Company or Requested Resource Type & Battalion 1 (Must be approved by the Battalion Chief prior to dispatching)	
Special Alarm	<b>Entrapment Alarm</b> – 1 Engine, 1 Ladder, 1 Medic, Battalion 1 <b>Hazmat Alarm</b> – 1 Engine, 1 Ladder, 1 Medic, plus Engine 3, Hazmat 3 and Battalion 1 <b>Hazmat Alarm (Outside City)</b> – Engine 3, Hazmat 3, Battalion 1 <b>Tender Alarm</b> – 3 (Three) Tenders <b>Technical Rescue Alarm</b> – 1 Engine, 1 Ladder, Engine 2, 1 Medic, 1 Battalion Chief <b>Mayday Alarm</b> – 2 Engines (or 1 Engine and 1 Ladder) and 1 Medic	FD Command Staff notified via EverBridge Hazmat Incident Notification Group notified via EverBridge ASAP for any Hazmat Alarm
Standard Alarm	3 Engines, 1 Ladder, 1 Medic, 1 Battalion Chief	If a "Working Fire" is declared, the "Working Fire" notifications shall occur: FD Command Staff notified via EverBridge
2 <sup>nd</sup> Alarm	"Standard Alarm" plus 2 (Two) additional fire companies; Engines or Ladders	FD Command Staff notified of 2 <sup>nd</sup> Alarm via EverBridge
3 <sup>rd</sup> Alarm	"2 <sup>nd</sup> Alarm" plus 2 (Two) additional fire companies; Engines or Ladders	FD Command Staff notified to respond via EverBridge. Command Staff member to Dispatch. All FD Personnel notified via EverBridge
4 <sup>th</sup> Alarm	"3 <sup>rd</sup> Alarm" plus 4 (Four) additional fire companies, Engines or Ladders	Callback of ALL off-duty personnel via EverBridge. Command Staff member to coordinate off-duty personnel

The following table identifies the SFD call types, the alarm type assigned, and when indicated a response mode:

Call Type (and Unicode)	Definition	Response	Response Mode
Aircraft Emergency Unicode - AIRCRAFT STANDBY	Any request for standby for a potential incident involving an aircraft, helicopter, glider, or hot air balloon. Alert 1 and 2 for Springdale Municipal Airport.	<b>Alert 1 &amp; 2 (Standby) (Still Alarm)</b> 1 ENGINE 1 MEDIC 1 BATTALION CHIEF	

Aircraft Emergency Unicode - AIRCRAFT CRASH	Any crash, fire or incident involving an aircraft, helicopter, glider, or hot air balloon. Alert 3 for Springdale Municipal Airport.	<b>Alert 3 (Crash) (Standard Alarm)</b> 3 ENGINES 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
Aircraft Emergency Unicode – *XNA Response* ALPHA	Alert activation from Northwest Arkansas Regional Airport (XNA).	<b>Alpha</b> - Engine 41, Rescue 41, Car 41	
Aircraft Emergency Unicode – *XNA Response* BRAVO	Alert activation from Northwest Arkansas Regional Airport (XNA).	<b>Bravo</b> - Engine 41, Rescue 41, Car 41, 2 SFD Medics	
Aircraft Emergency Unicode – *XNA Response* CHARLIE	Alert activation from Northwest Arkansas Regional Airport (XNA).	<b>Charlie</b> - Engine 41, Rescue 41, Car 41,, Engine 51, Tender 51, 2 SFD Medics	
Assist Other Agency (Police, etc.) Unicode - STANDBY	Request by Police or other public safety agency for fire department assistance.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Assist with Lifting Unicode -SVC	A citizen who needs lifting assistance that is NOT injured and does NOT require an medic unit. If the citizen is injured, this should be coded a medical emergency by priority symptom or chief complaint.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Bomb or Explosion Threat Unicode - FBOMB	Threat of explosion or placed bomb received.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY 1 MEDIC	<b>Non- Emergent</b>
Interstate Fire Unicode - GFIRE	Fire in grass and/or trees accessible only from the Interstate.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY FROM EACH DIRECTION - NORTH AND SOUTH.	

Car Fire Unicode - VFIRE	Fire or smoke coming from a car that is NOT inside a structure. If inside a structure, code as the appropriate structure fire and dispatch a standard alarm.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Carbon Monoxide No Symptoms Unicode - COALARM	Carbon Monoxide detector going off with no occupants having symptoms (headache, tired, flu-like).	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non-Emergent</b>
Carbon Monoxide With Symptoms Unicode - PRIORITY SYMPTOM OR CHIEF COMPLAINT	Carbon Monoxide detector going off with occupants having symptoms or feeling ill. Should be handled as medical call by priority symptom or chief complaint.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY 1 MEDIC	
Commercial Alarm Unicode - CALARM	Alarm inside a building from an alarm company or person on-site. This includes smoke alarms, fire alarms, and water flow alarms.	<b>(Still Alarm)</b> CLOSEST ENGINE COMPANY CLOSEST LADDER COMPANY	
Controlled or Illegal Burn Unicode - CBURN	Complaint of a controlled or illegal burn where there is no permit, rules of burning is not being followed, or a complaint of the smoke is received.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non-Emergent</b>
Dumpster Fire Unicode - DFIRE	Fire or smoke coming from a dumpster. If fire is close to a structure, code as the appropriate structure fire and dispatch a standard alarm.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non-Emergent</b>
Electrical Line Problem - Transformer Fire Unicode - ULINES Unicode - POLEFIRE	Electrical lines or unknown lines, down on the ground or sparking in trees or on utility poles. Also includes transformer fires.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	

Elevator Rescue Unicode - ELEVATOR	Persons trapped in an elevator inside a building with no complaints of illness and/or injury	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY CLOSEST LADDER COMPANY	<b>Non-Emergent</b>
Elevator Rescue Unicode - ERESCUE	Persons trapped in an elevator inside a building WITH complaints of illness and/or injury.	<b>(Entrapment Alarm)</b> 1 ENGINE 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
EMS Assist Unicode - EMSA	Response with OUTSIDE EMS agency to a medical call.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Explosion Heard Unicode - EXPLODEH	Explosion heard - no visible smoke, flame, or known source.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non-Emergent</b>
Explosion Seen Unicode - EXPLODES	Explosion seen - visible smoke and/or flame from a structure. If explosion does not involve a structure, handle with most appropriate call type.	<b>(Standard Alarm)</b> 3 ENGINES 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
Fluid Spill - Small Unicode - SPILL	Small amount (approx. 49 gallons or less) of fluids or fuel on the ground from a non-injury motor vehicle accident or other source.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non-Emergent</b>
Fluid Spill - Large Unicode - LSPILL or HAZMATI	Large amount (approx. 50 gallons or more) of fluids or fuel on the ground from a non-injury motor vehicle accident or other source.	<b>(Hazmat Alarm)</b> 1 ENGINE 1 LADDER ENGINE 3 HAZMAT 1 1 MEDIC 1 BATTALION CHIEF	
Grass Fire Unicode - GFIRE	Fires in grass, woodlands, trees and outside areas where no vehicles, buildings or equipment are directly involved. If fire is involving a structure, code as the appropriate structure fire and dispatch a standard alarm.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY  ***BRUSH UNITS MUST BE REQUESTED	

Hazardous Materials Release / Emergency Unicode - HAZMATI	Any unknown fluid, vapor or substance (including "white powder"), hazardous chemical leak/spill, or toxic substance leak/spill that poses a threat to the public.	<b>(Hazmat Alarm)</b> 1 ENGINE 1 LADDER ENGINE 3 HAZMAT 1 1 MEDIC 1 BATTALION CHIEF	
Industrial Accident with Entrapment Unicode - INDE	Person trapped or entangled in industrial equipment. If the person is no longer trapped or entangled, handle as a medical call only by priority symptom or chief complaint.	<b>(Entrapment Alarm)</b> 1 ENGINE 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
Residential Structure Fire Unicode - RFIRE	Fires in any part of a residential structure. Residential Structure Fires include fires in kitchens, garages, porches, trashcans inside houses, smoke inside a residence, etc. Please note that CAR FIRES inside or next to houses should be coded as RESIDENTIAL FIRES.	<b>(Standard Alarm)</b> 3 ENGINES 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
Medical Emergency	Criteria as determined by the Medical Priority Dispatch System.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY 1 MEDIC	
Motor Vehicle Accident Unicode - MVA	Accident involving cars or off-road vehicles where injuries are present.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY 1 MEDIC	
Motor Vehicle Accident – Extrication Probable Unicode - MVE	Accidents reported with people trapped or a rollover or unstable vehicle unless ALL occupants are confirmed out.	<b>(Entrapment Alarm)</b> 1 ENGINE 1 LADDER 1 MEDIC 1 BATTALION CHIEF	
Mutual Aid – Grass Fire Unicode - MAID	Grass fires where assistance is requested by other fire departments.	<b>(Still Alarm)</b> ***BATTALION CHIEF MUST APPROVE THE SENDING OF A MUTUAL AID UNIT. CLOSEST FIRE COMPANY OR SPECIFIC APPARATUS REQUESTED & 1 BATTALION CHIEF	



Mutual Aid – Hazardous Materials Unicode - MAIDHM	Hazardous materials incident that occurs outside of the city where assistance is requested by another fire department.	<b>(Hazmat Alarm Outside City)</b> <b>***BATTALION CHIEF MUST APPROVE THE SENDING OF A MUTUAL AID UNIT.</b> ENGINE 3 HAZMAT 3 1 BATTALION CHIEF	
Mutual Aid – Rescue Unicode - MAID	Rescue incidents, including car accidents, where rescue assistance is requested by other fire departments.	<b>***BATTALION CHIEF MUST APPROVE THE SENDING OF A MUTUAL AID UNIT.</b> APPARATUS TYPE REQUESTED & 1 BATTALION CHIEF	
Mutual Aid – Structure Fire Unicode - MAID	Fires where assistance is requested by other fire departments.	<b>(Still Alarm)</b> <b>***BATTALION CHIEF MUST APPROVE THE SENDING OF A MUTUAL AID UNIT.</b> CLOSEST FIRE COMPANY OR SPECIFIC APPARATUS REQUESTED & 1 BATTALION CHIEF	
Natural Gas Leak or Odor Unicode - LEAK	An odor or visible leak of natural gas either outside or inside a structure.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Odor Investigation Unicode - ODOR	Unknown type of odor from an unknown source. Odors of smoke or natural gas should be handled under their appropriate call type.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY Responding company may consider requesting E3 for monitoring equipment	<b>Non-Emergent</b>

Rescue, Technical Unicode - RESCUE	Citizens trapped in trenches, confined spaces, or other situations by collapse or similar.	<b>(Tech Rescue Alarm)</b> 1 Engine 1 Ladder Engine 2 Battalion 1	
Residential Fire Alarm Unicode - RALARM	Alarm inside a RESIDENCE from an alarm company or person on-site. This includes smoke alarms, fire alarms, and water flow alarms.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Semi / Large Truck Fire Unicode - FTRUCK	Large truck or semi with trailer on fire. If a structure is involved or threatened, code the call as the appropriate structure type and dispatch a standard alarm.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	
Smoke Detector Sounding Unicode - SD	This code is utilized for instances where a smoke detector is sounding (regardless if building is occupied or unoccupied) with no signs of fire (smoke, odor, heat, electrical problems, etc.). This call type should NEVER be used for when alarm companies call alarm in.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Smoke Odor Outside Unicode - SMOKE	Smoke or haze outside where caller cannot determine the source. If source of the fire is identified, upgrade the assignment to the appropriate call type.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Structure Fire (Commercial, Apartment, or Industrial) Unicode - RFIRE Unicode - CFIRE Unicode - FAPT Unicode - FLFIRE Unicode - FIRE	Fire in a building that is not a house or duplex. This can also include outside fires (car, dumpster, grass, etc.) directly impinging on a building. This includes APARTMENTS.	<b>(Standard Alarm)</b> 3 ENGINES 1 LADDER 1 MEDIC 1 BATTALION CHIEF  Depending on Occupancy, Battalion Chief may immediately request 2nd Alarm	

Tender Alarm Unicode - RTANKER Unicode - CTANKER	Tenders needed for water supply for incident - three tenders from rural agencies.	<b>(Tender Alarm)</b> 3 TENDERS FROM NEARBY RURAL AGENCIES	
Train / Rail Fire Unicode - FTRAIN	Train on fire and/or derailment of train.	<b>(Standard Alarm)</b> 3 ENGINES 1 LADDER 1 MEDIC 1 BATTALION CHIEF *IF THERE ARE KNOWN HAZARDOUS MATERIALS, ENGINE 3 AND HAZMAT 3 NEED TO BE DISPATCHED.	
Tree Fire Unicode - TREEF	Tree on fire with no involved or threatened structures.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Public Service Unicode - SVC	This call type is used as a miscellaneous call type for non-emergency incidents. Examples could be debris cleanup, checking on the well-being of a resident, etc.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Unknown Problem Unicode - FUNK	Unknown type of incident that would warrant a fire department response.	<b>(Still Alarm)</b> CLOSEST FIRE COMPANY	<b>Non- Emergent</b>
Water Rescue Unicode - WATERR	Accidents involving watercraft, or vehicles stranded in high water. Confirmed drowning should be coded as MEDICAL EMERGENCY	<b>(Tech Rescue Alarm)</b> 1 ENGINE 1 LADDER 1 MEDIC ENGINE 2 1 BATTALION CHIEF	

Resources (Engines and Ladders) should be requested in the following order until an agency is unable to send any further resources. Once an agency states they can no longer send resources, call the next agency.

**This resource list is for all areas of Springdale located in Washington County**

Springdale► Fayetteville► Lowell► Rogers► Bentonville► Siloam Springs► Bella Vista

**This resource list is for all areas of Springdale located in Benton County**

Springdale► Lowell► Rogers► Fayetteville► Bentonville► Siloam Springs► Bella Vista



## Springdale Fire Department Policies & Procedures

Policy Title: Changing Assignments

Policy

Number: 501.2

Volume: 5 – Fire Operations

Approved By: Fire Chief Mike Irwin

CFAI Reference: n/a

CAAS Reference: n/a

Last Updated: November 2013

Created: December 2003

Formatted: June 2016

Shift Commanders are ultimately responsible to ensure dispatched assignments are accurate and to correct assignments as necessary. All personnel must remain attentive of dispatched assignments, specifically what unit is dispatched, and the location of the incident.

Personnel are authorized to change any assignment as deemed appropriate. Changes to a dispatched assignment may include adding additional unit(s) to the assignment, reducing unit(s) from the assignment, changing the response mode of any and or all responding unit(s), and assigning other unit(s) in place of the dispatched unit(s).

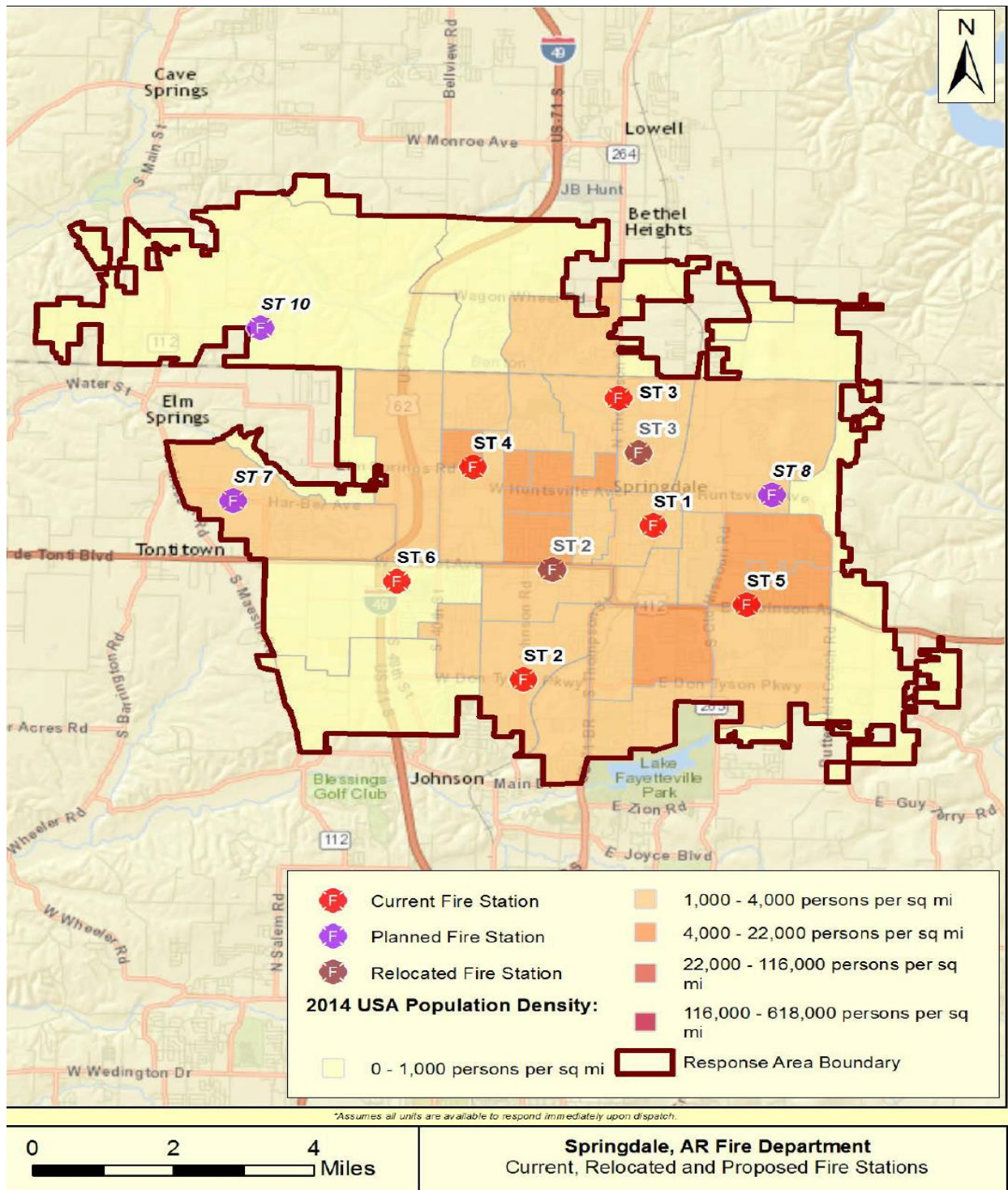
Personnel should always evaluate whether their unit should respond to an incident instead of the assigned unit. Personnel should use the following criteria to assist them in making this determination.

- First Due Areas
- The current location of the assigned unit
- The current location of their own unit

Whenever the determination is made for a “non-assigned” unit to respond in place of the assigned unit, personnel shall advise Dispatch to cancel the assigned unit and announce that their unit is “responding” in place of the assigned unit.

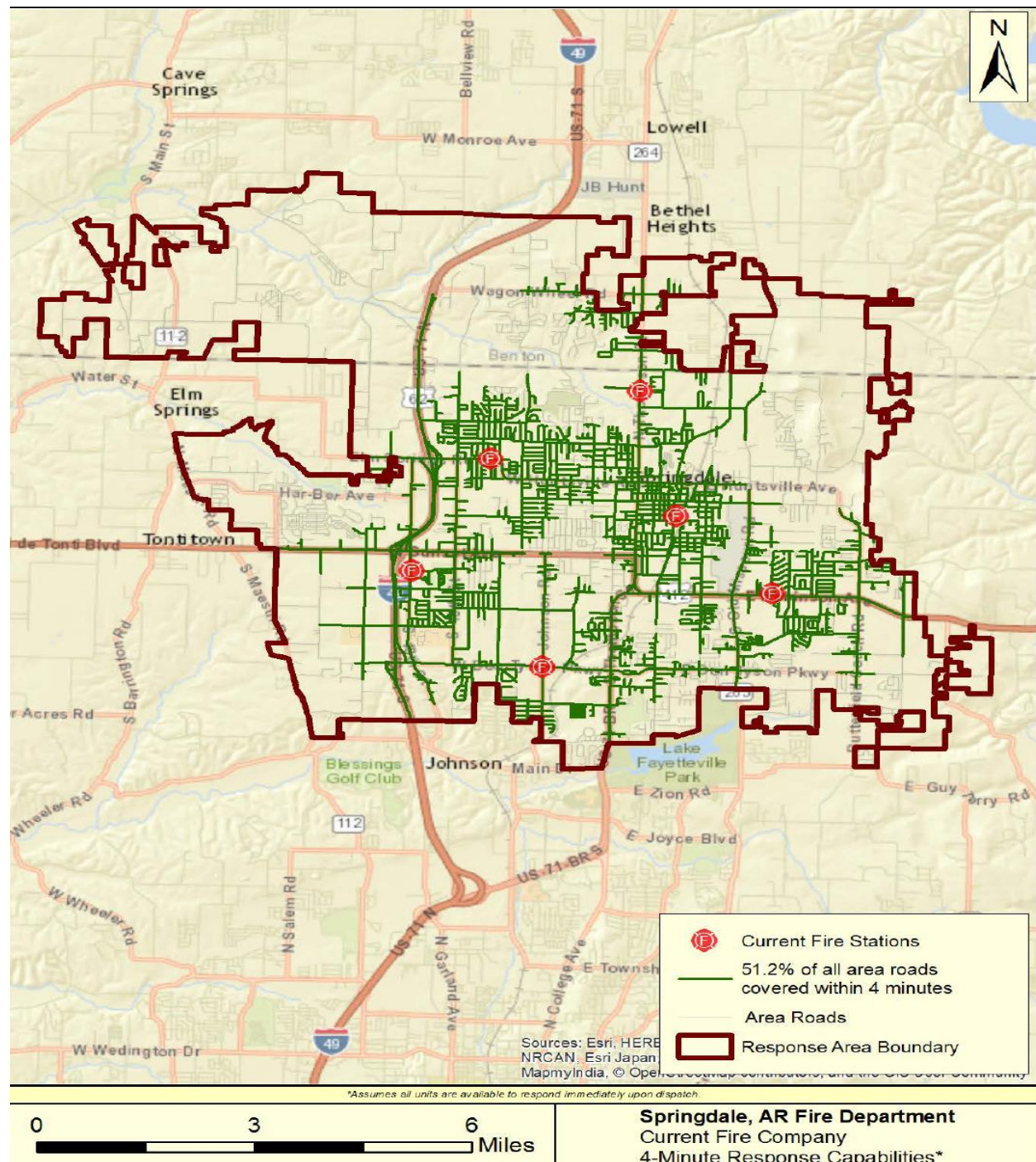
## Appendix G

The following maps were provided by the IAFF to show response capabilities. The map below shows the population density within the city limits as well as three proposed fire station locations.



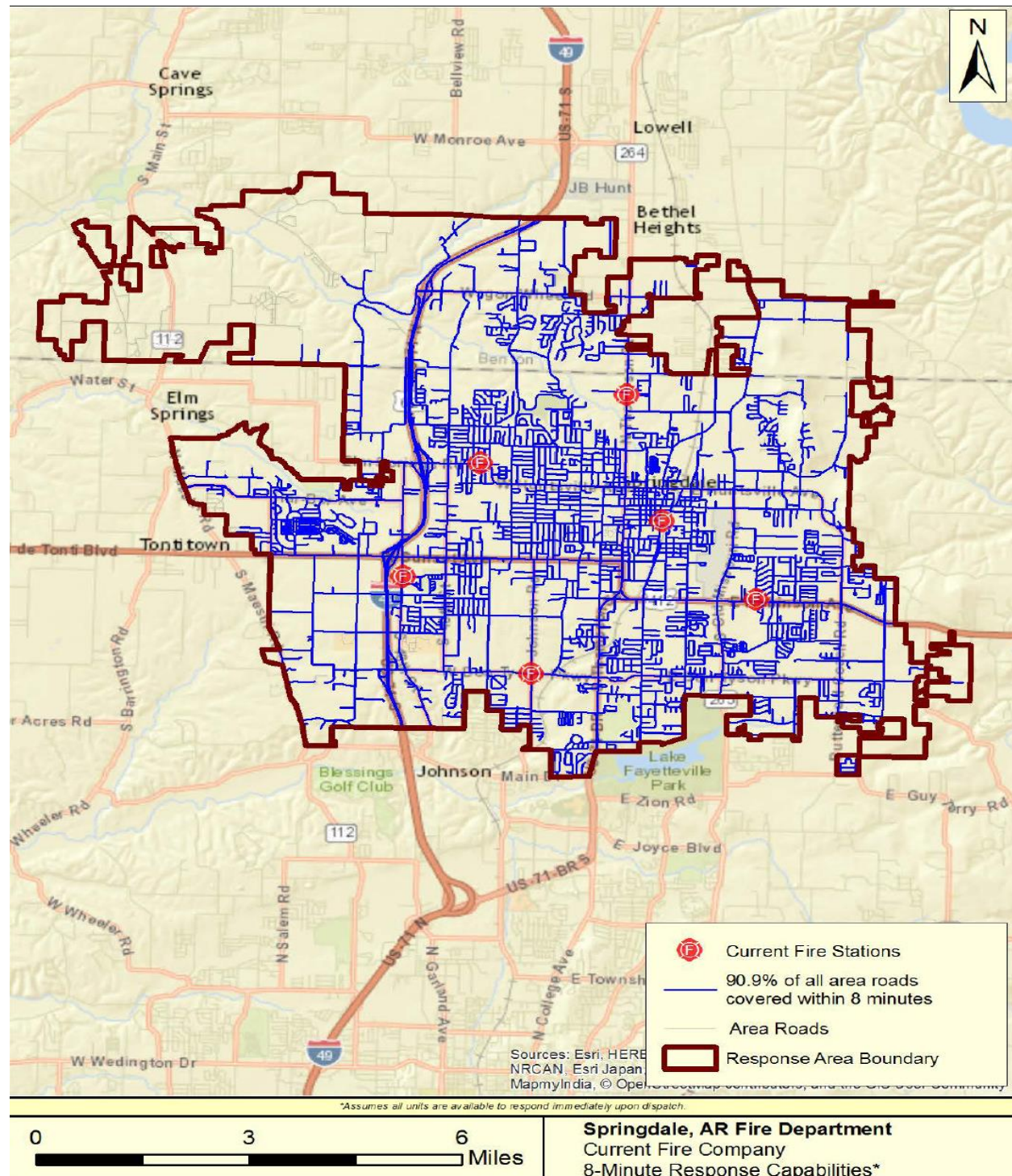


The green lines on the map below show the places within the city that can be reached with a 4-minute travel time for the first unit making total response time 6 minutes and 50 seconds if all other criteria are met.



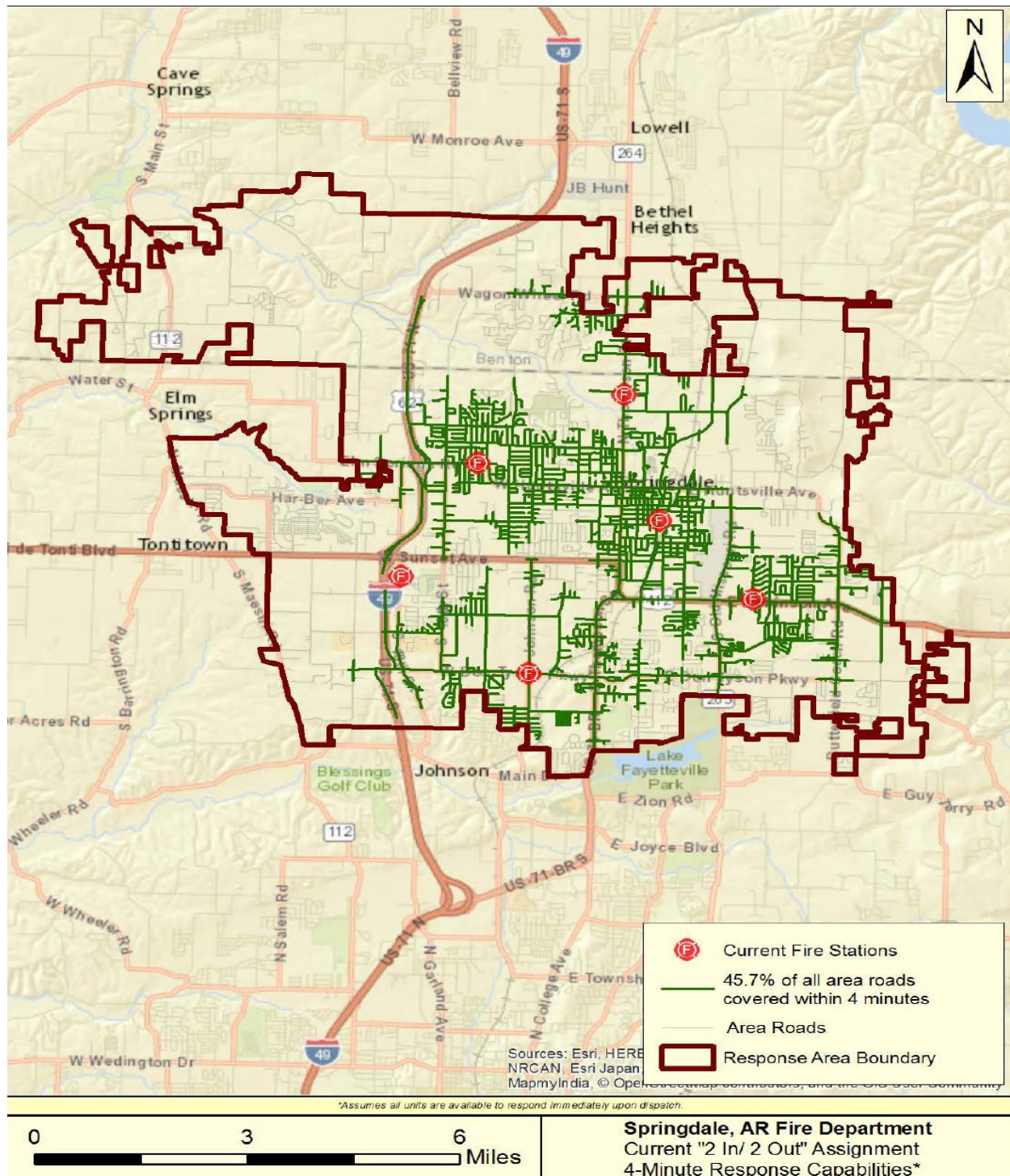


The blue lines on the map below show the places within the city that the department can service with an 8-minute travel time.



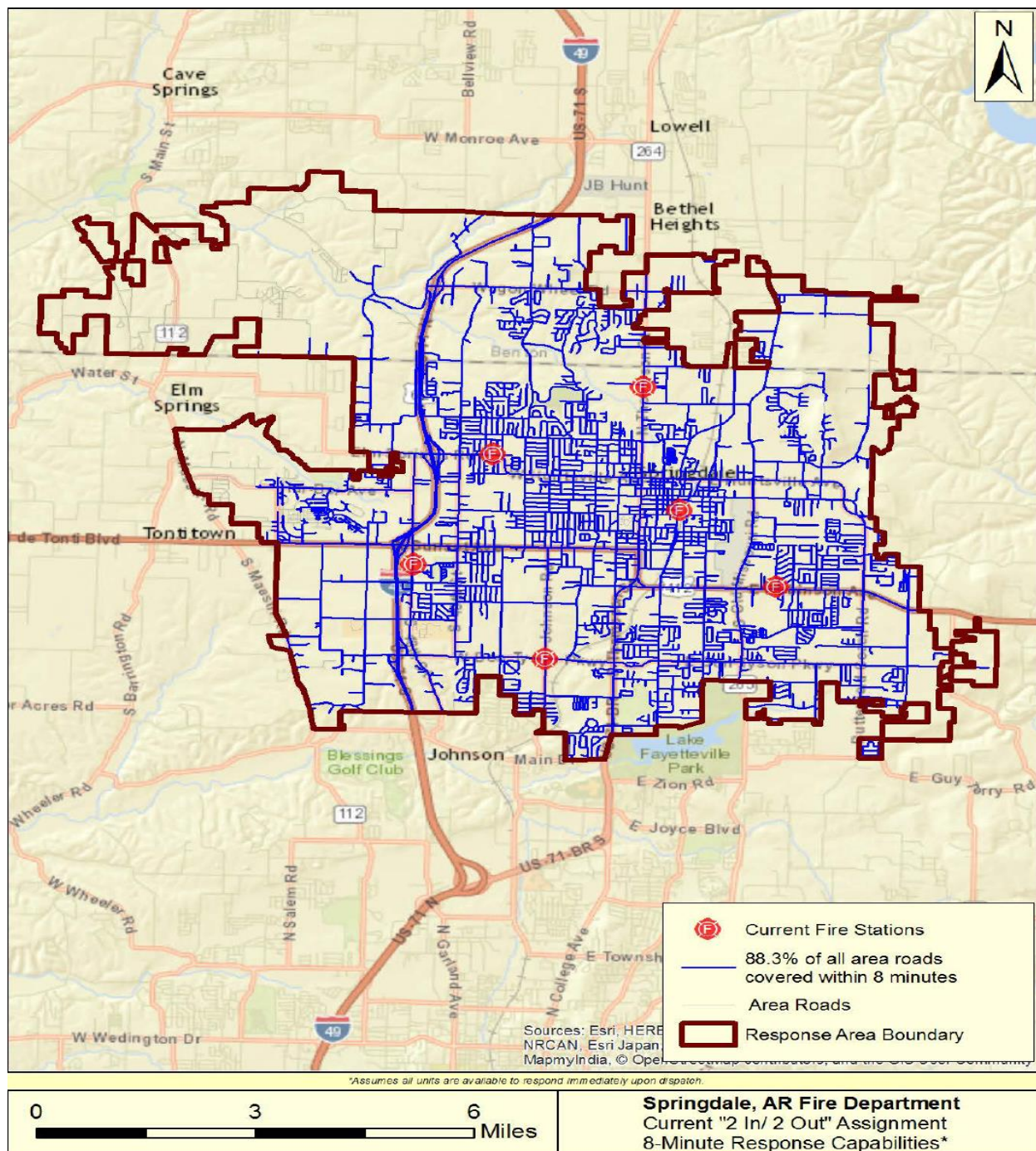


The green lines on the map below show the areas of the city that can be covered with a 4 minute travel time while also meeting the 2 in/ 2 out OSHA requirement.



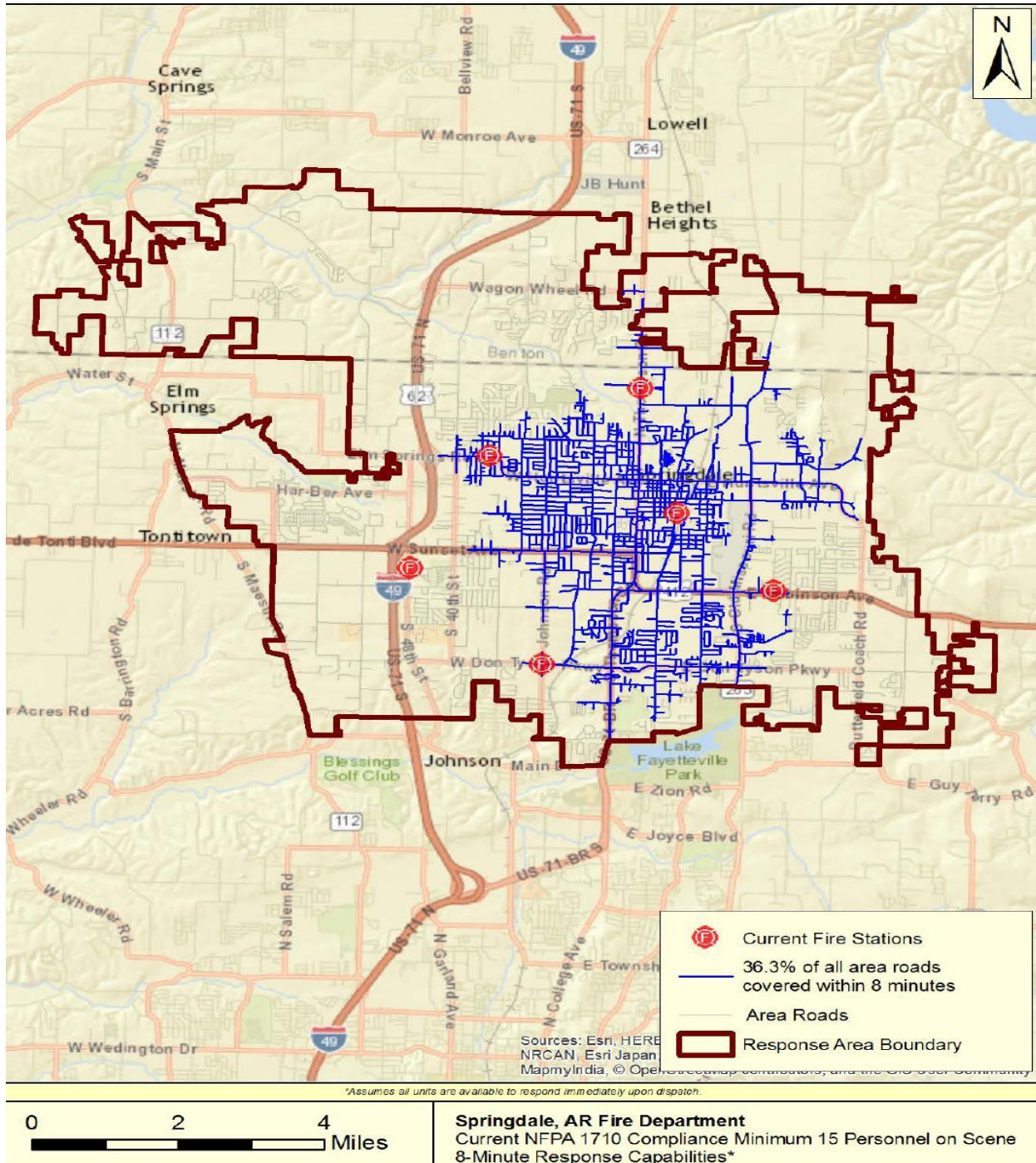


The blue lines on the map below show the areas of the city that can be covered with an 8-minute travel time while also meeting the two in/2 out OSHA requirement.



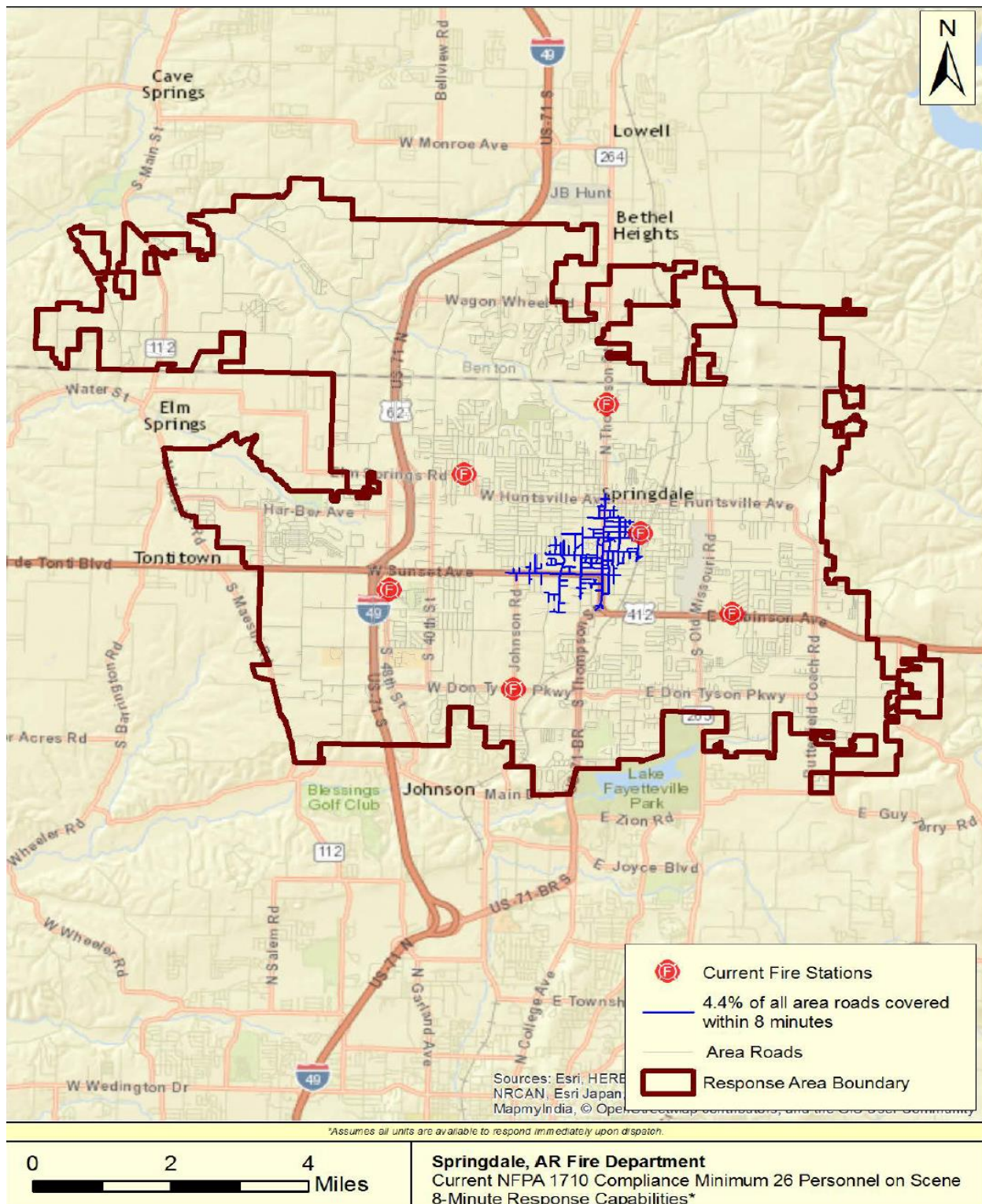


The blue lines on the map below show the areas of the city where the department can have an effective response force (ERF) on scene within 8 minutes for a structure fire that requires 15 personnel.



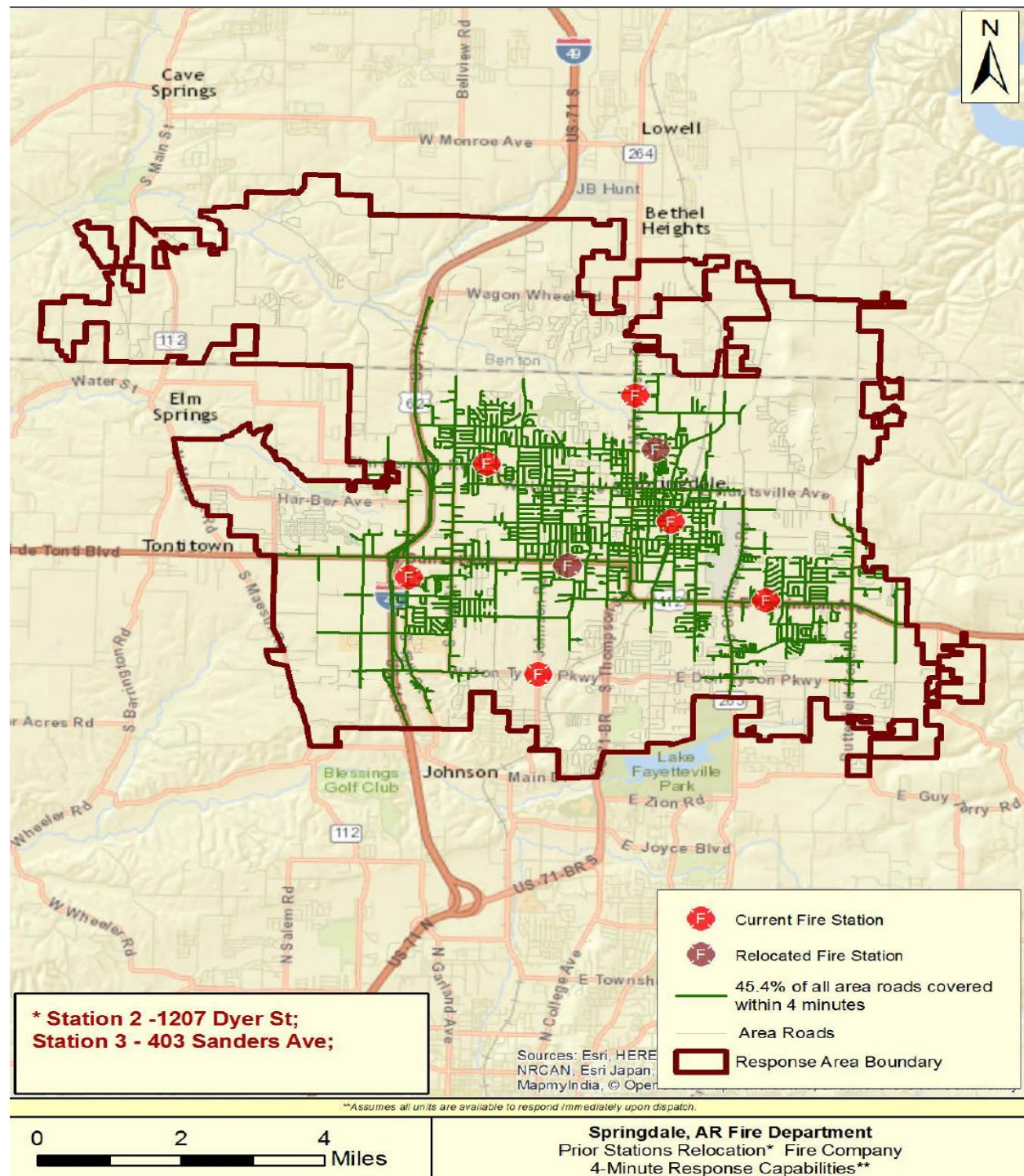


The blue lines on the map below show the areas of the city that can be covered with an 8-minute travel time in the event of a large-scale incident that would require 26 or more personnel.



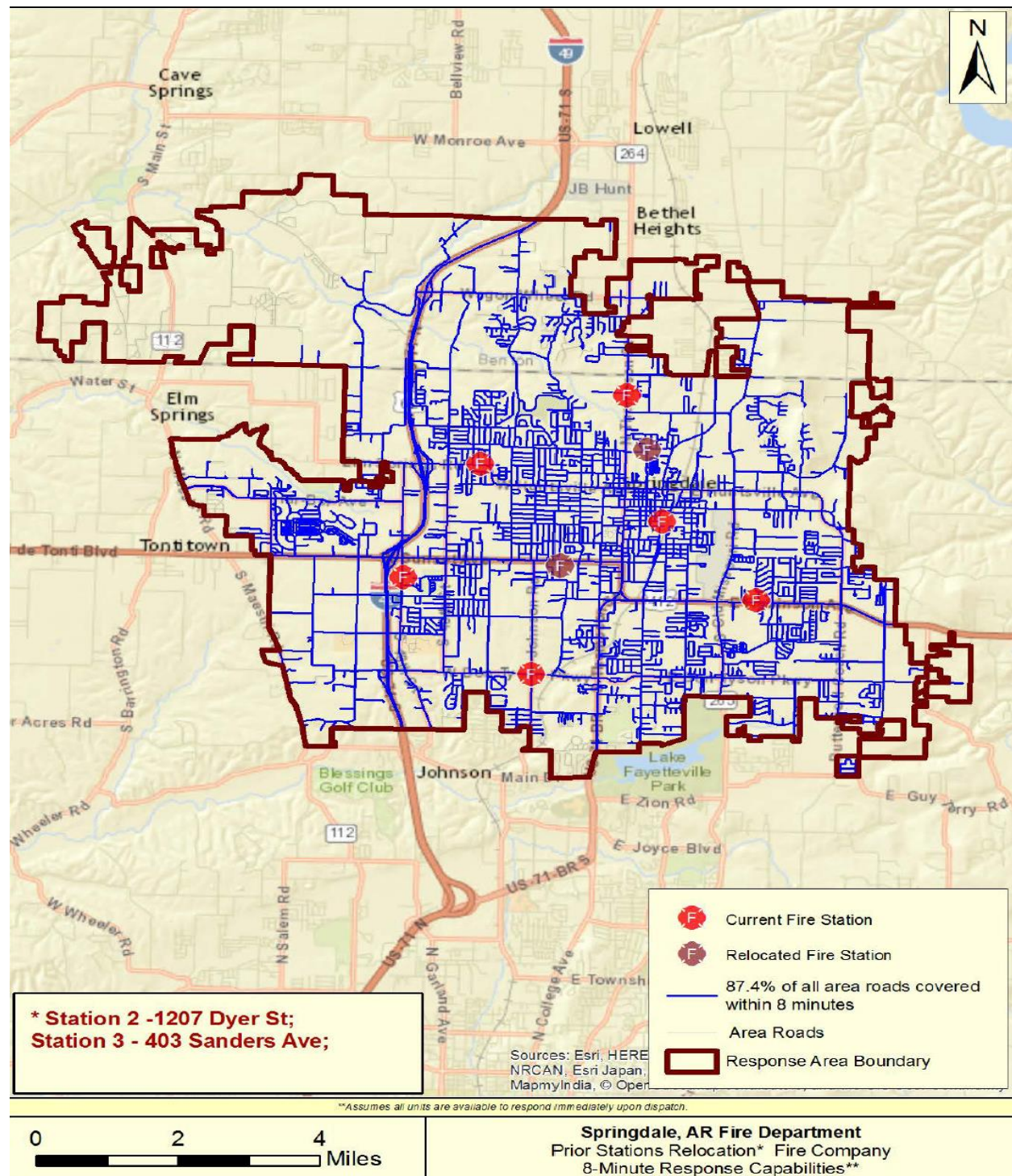


The green lines on the map below show the areas of the city that were covered within the 4 minute travel time prior to relocating Stations 2 & 3.



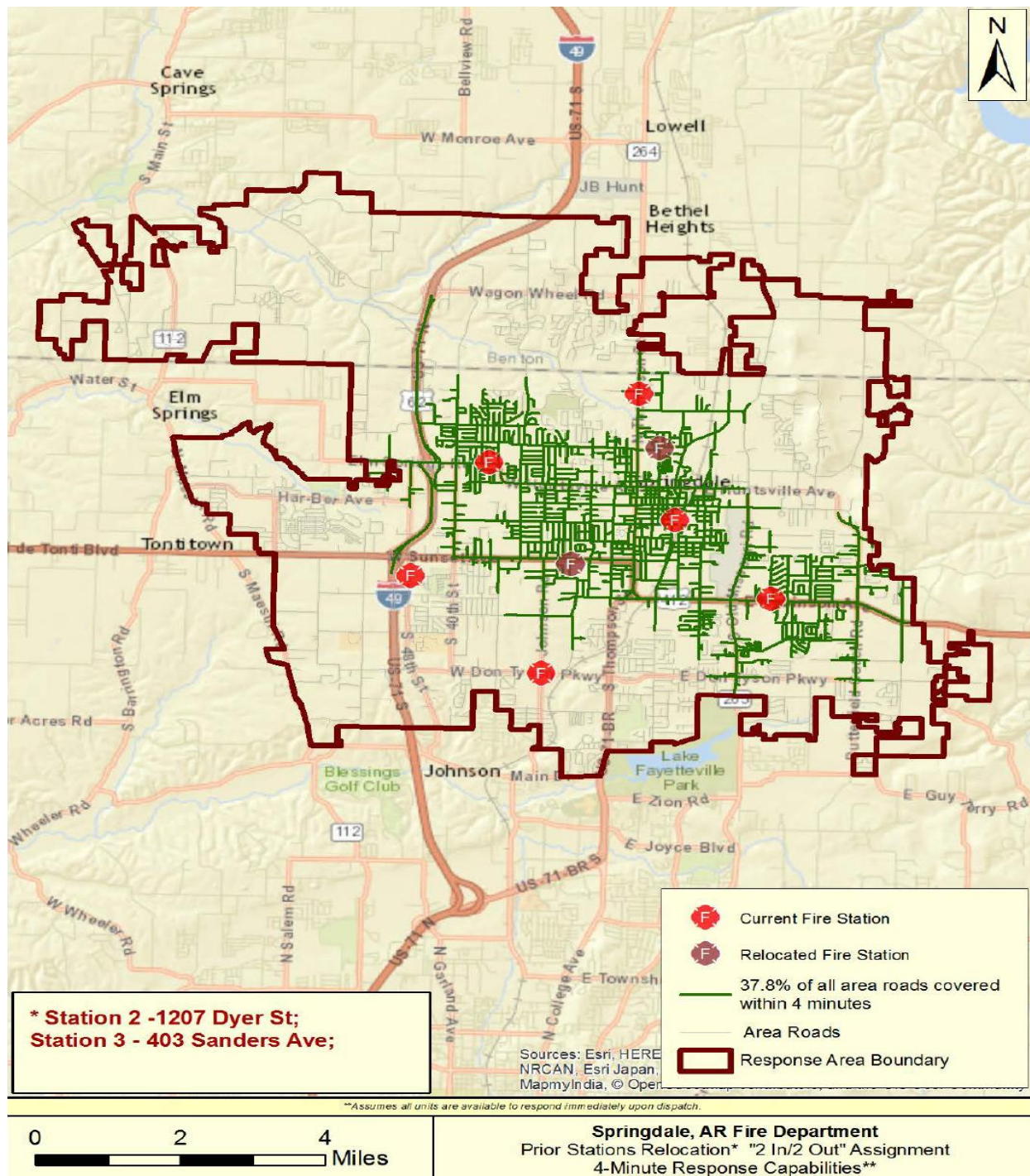


The blue lines on the map below show the areas of the city that were covered within the 8 minute travel time prior to relocating Stations 2 & 3.



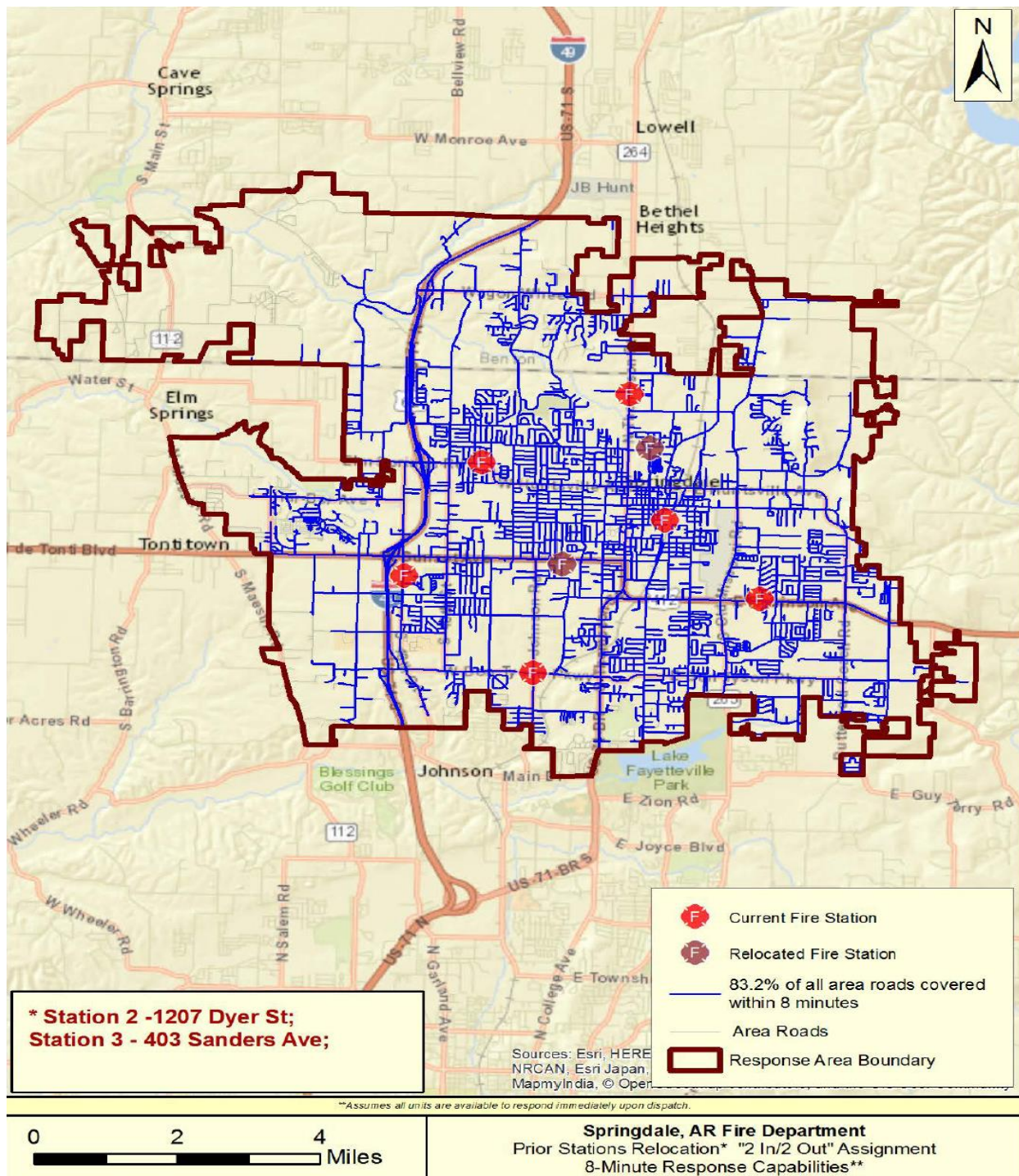


The green lines on the map below show the areas of the city that were covered within the 4-minute travel time and meet the OSHA 2 in/2 out regulation prior to relocating Stations 2 & 3.



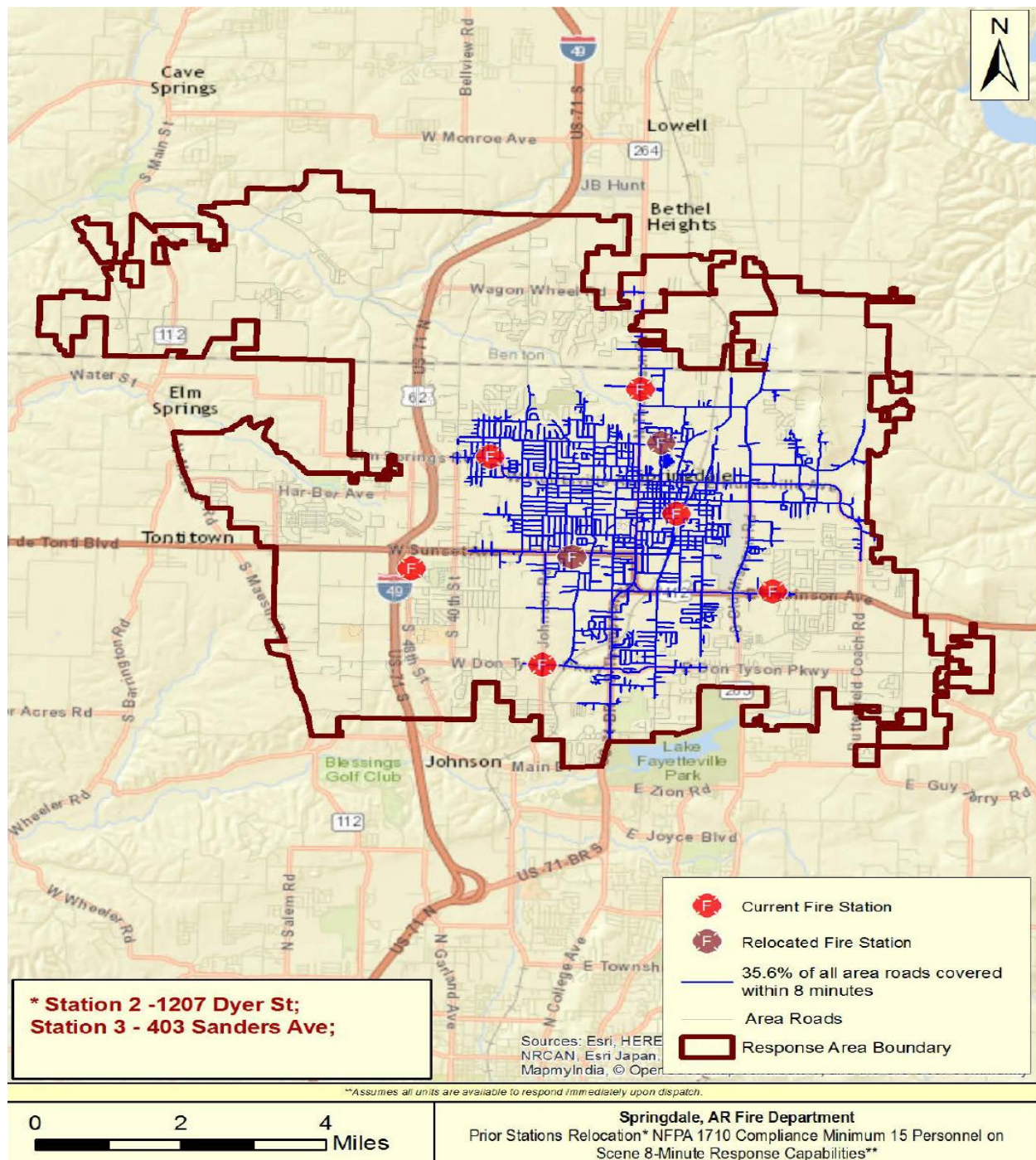


The blue lines on the map below show the areas of the city that were covered within the 8 minute travel time as well as meeting the OSHA 2 in/2 out regulation prior to relocating Stations 2 & 3.



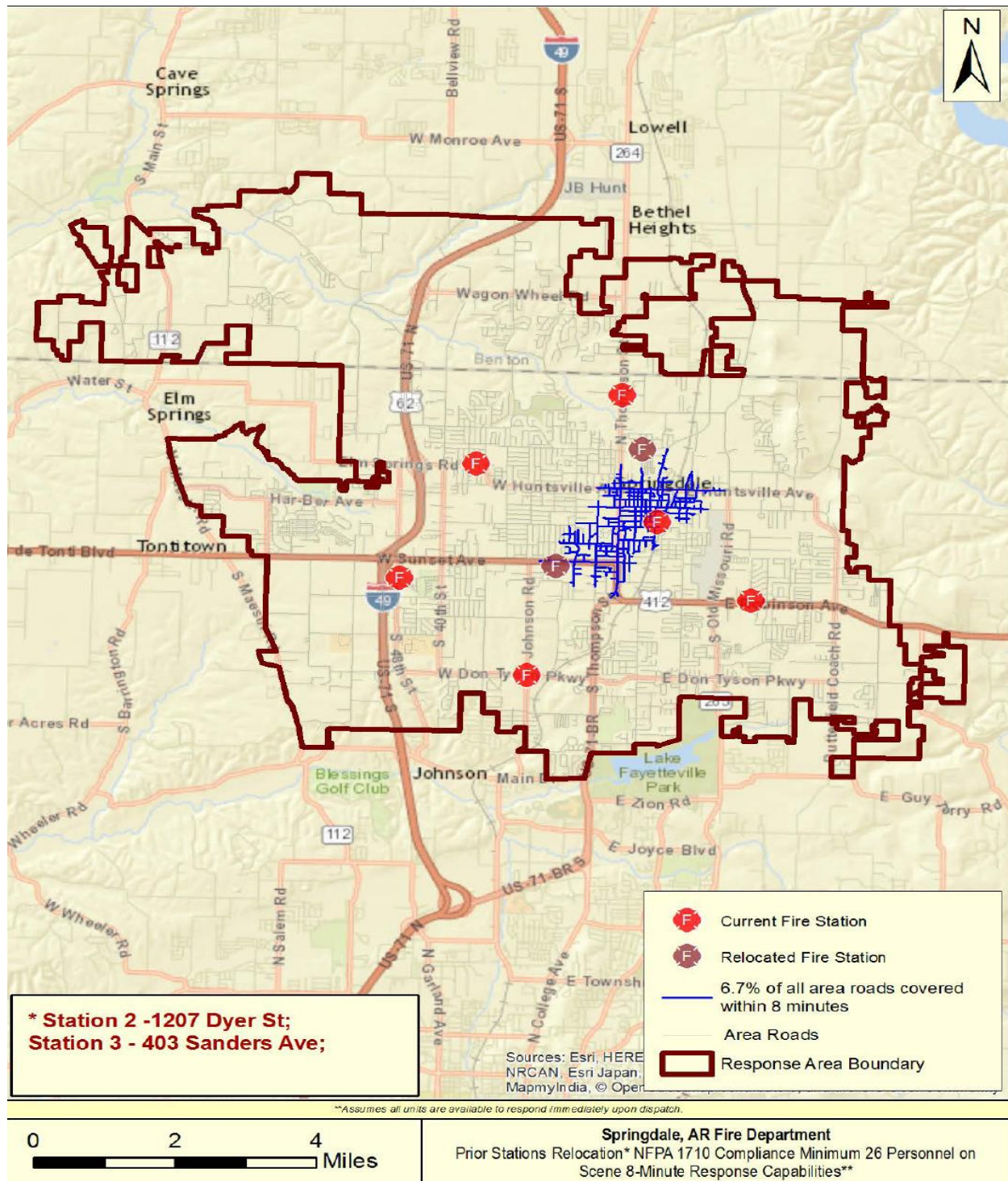


The blue lines on the map below show what areas of the city can have an effective response force on scene within 8 minutes for a structure fire that requires 15 personnel prior to relocation of Stations 2 & 3.



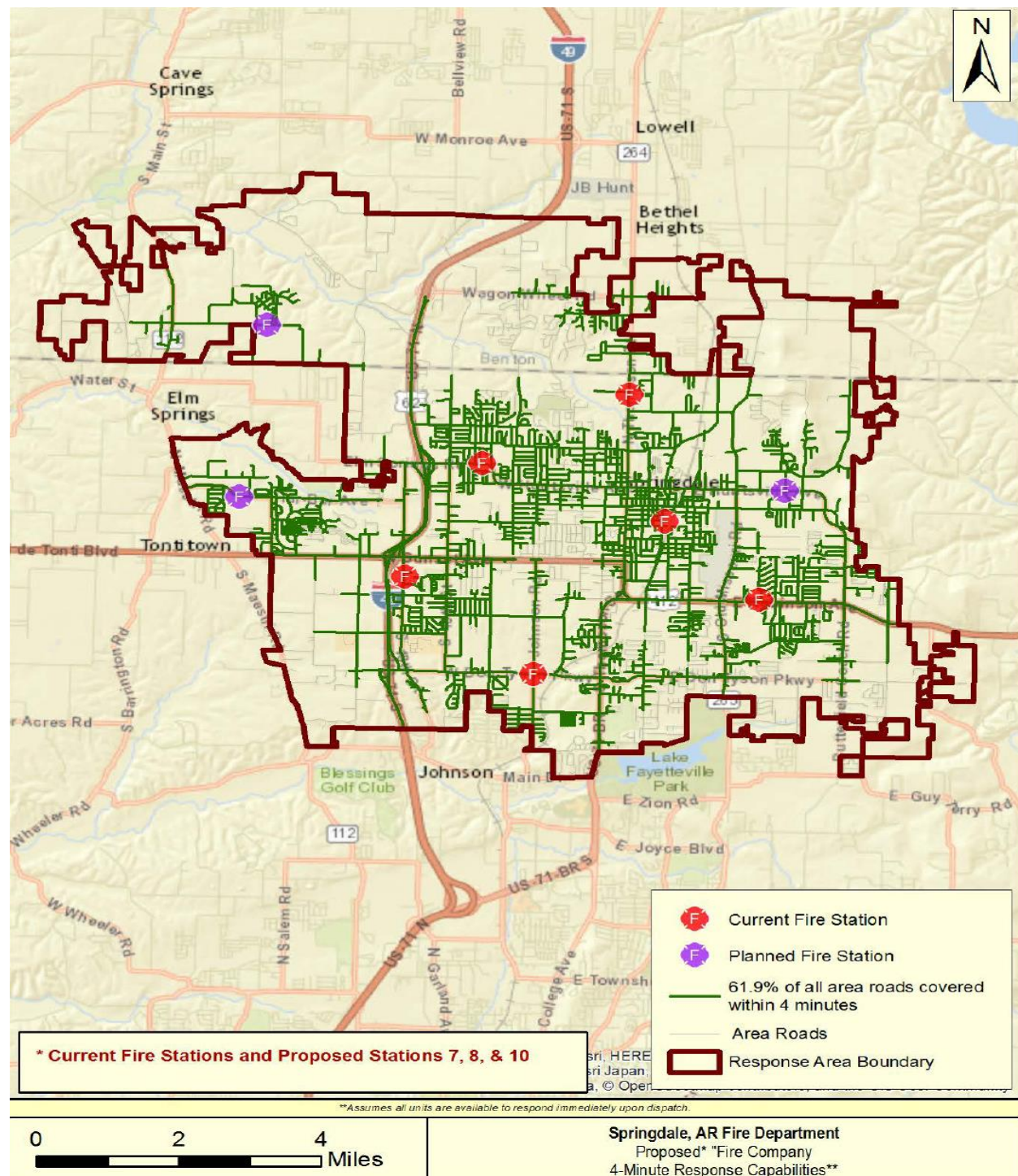


The blue lines on the map below show what areas of the city can be covered with an 8-minute travel time in the event of a large-scale incident that would require 26 or more personnel.



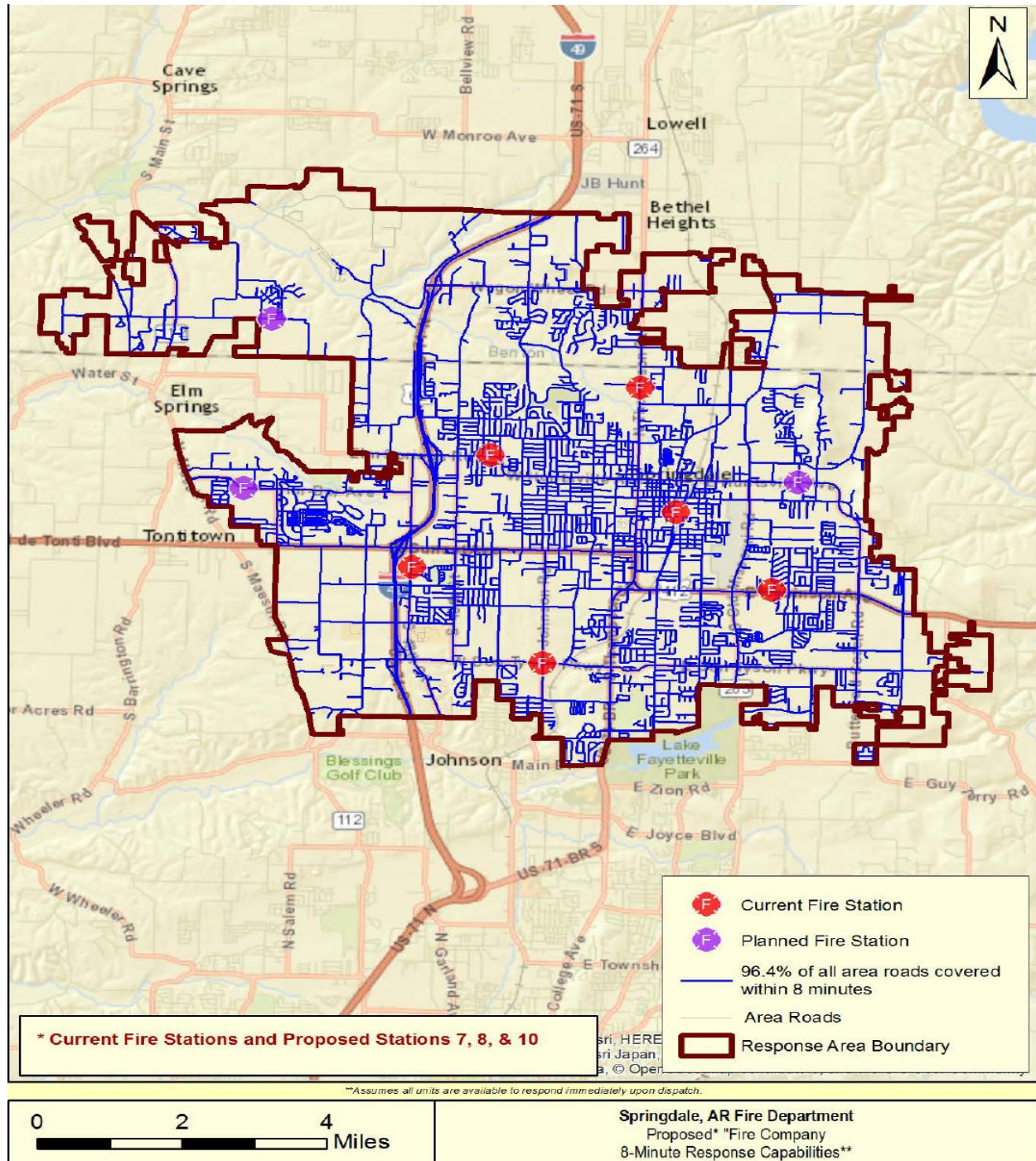


The green lines on the map below show what areas of the city could be covered within a 4-minute travel time with the three proposed stations and the already relocated Stations 2 & 3



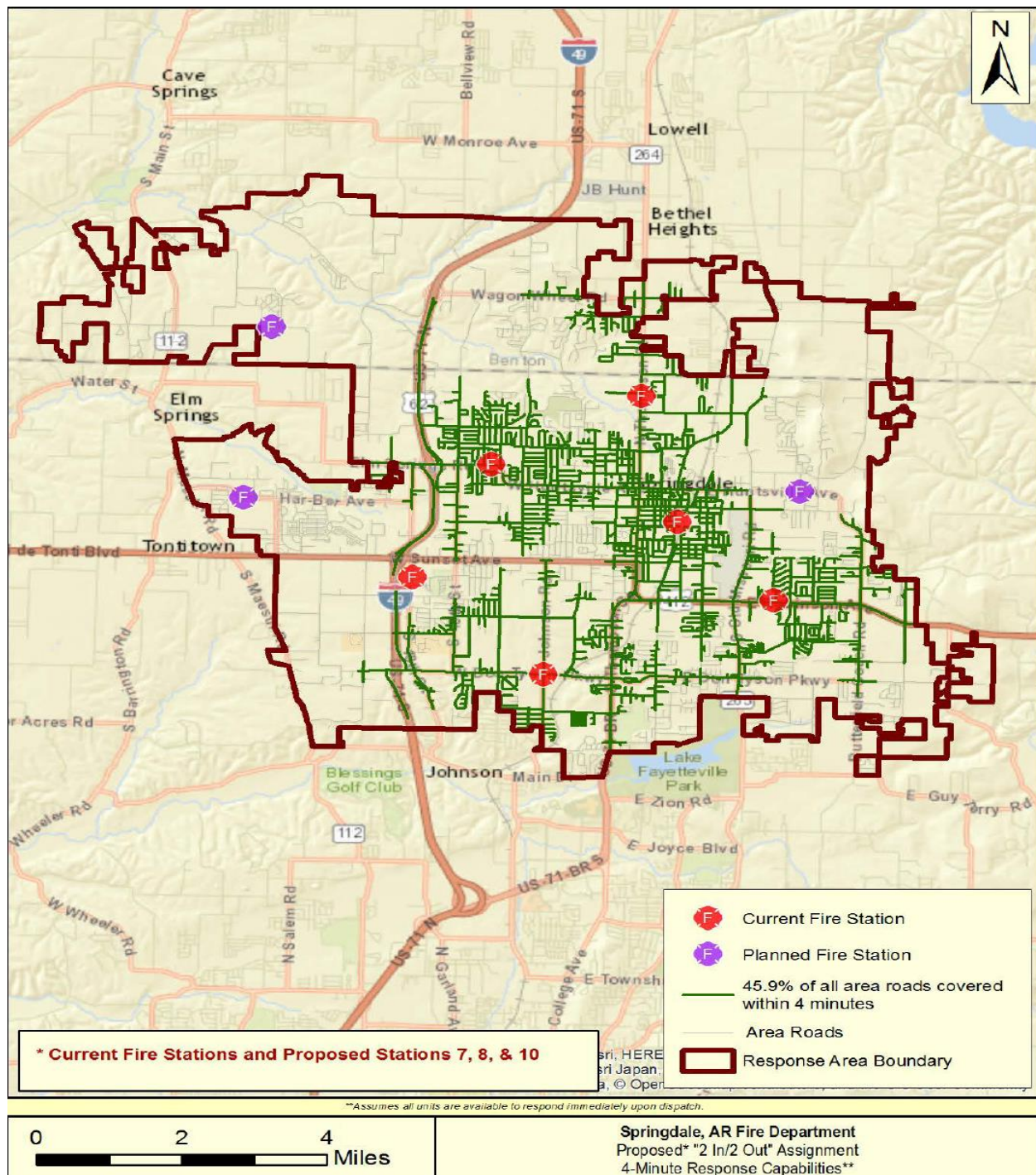


The map below is probably one of the most important. The blue lines show the 8-minute travel time coverage that would be available with the three proposed stations and the already relocated Stations 2 & 3. If those three stations were built, over 96% of the city could be covered within an 8-minute travel time.



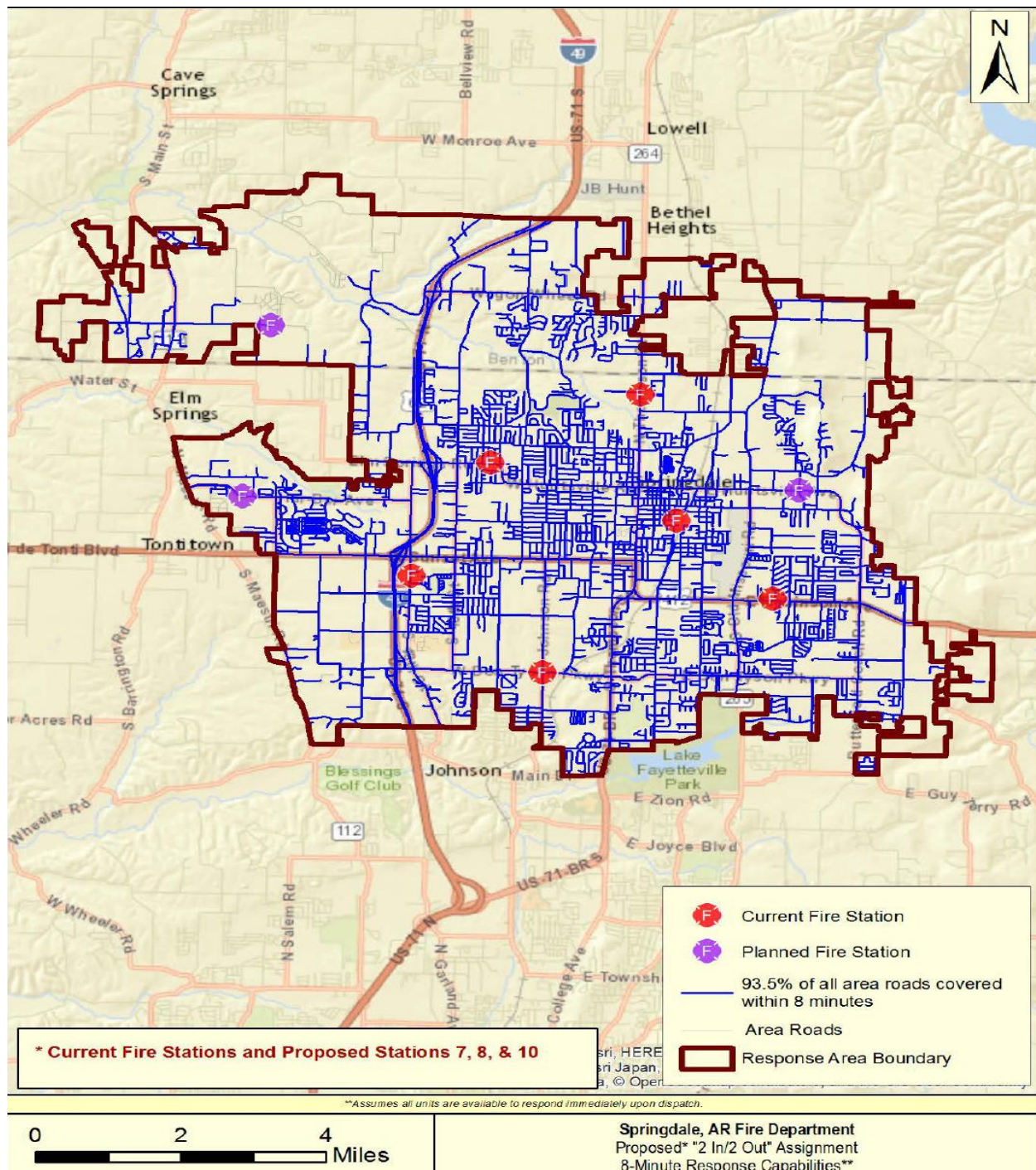


The green lines on the map below show the amount of coverage that could be possible within a 4 minute travel time while meeting OSHA's 2 in/2 out regulations with the three proposed stations and the already relocated Stations 2 & 3.



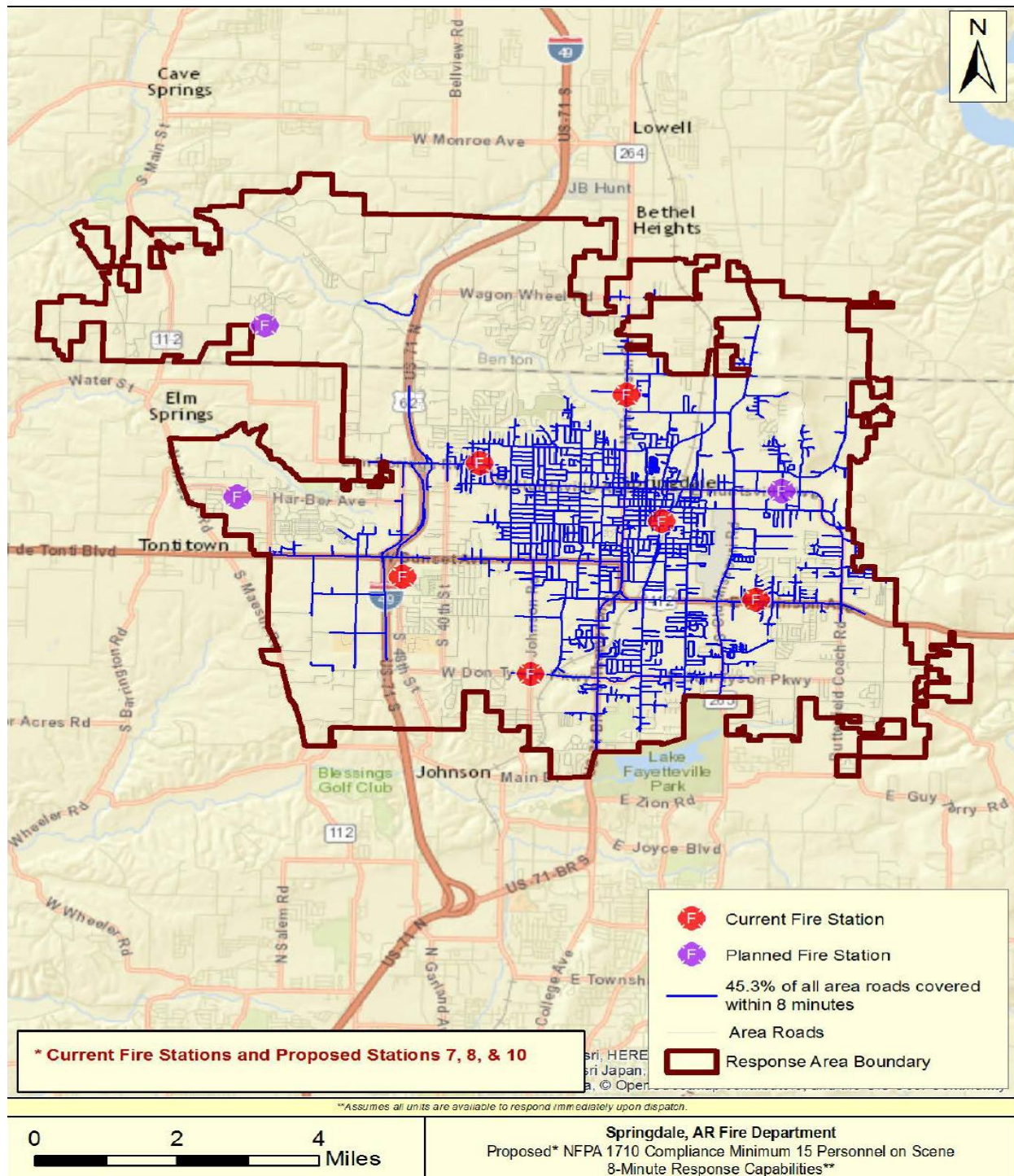


The blue lines on the map below show the areas of the city that could possibly be reached within a 4 minute travel time while meeting OSHA's 2 in/2 out regulations with the three proposed stations and the already relocated Stations 2 & 3.



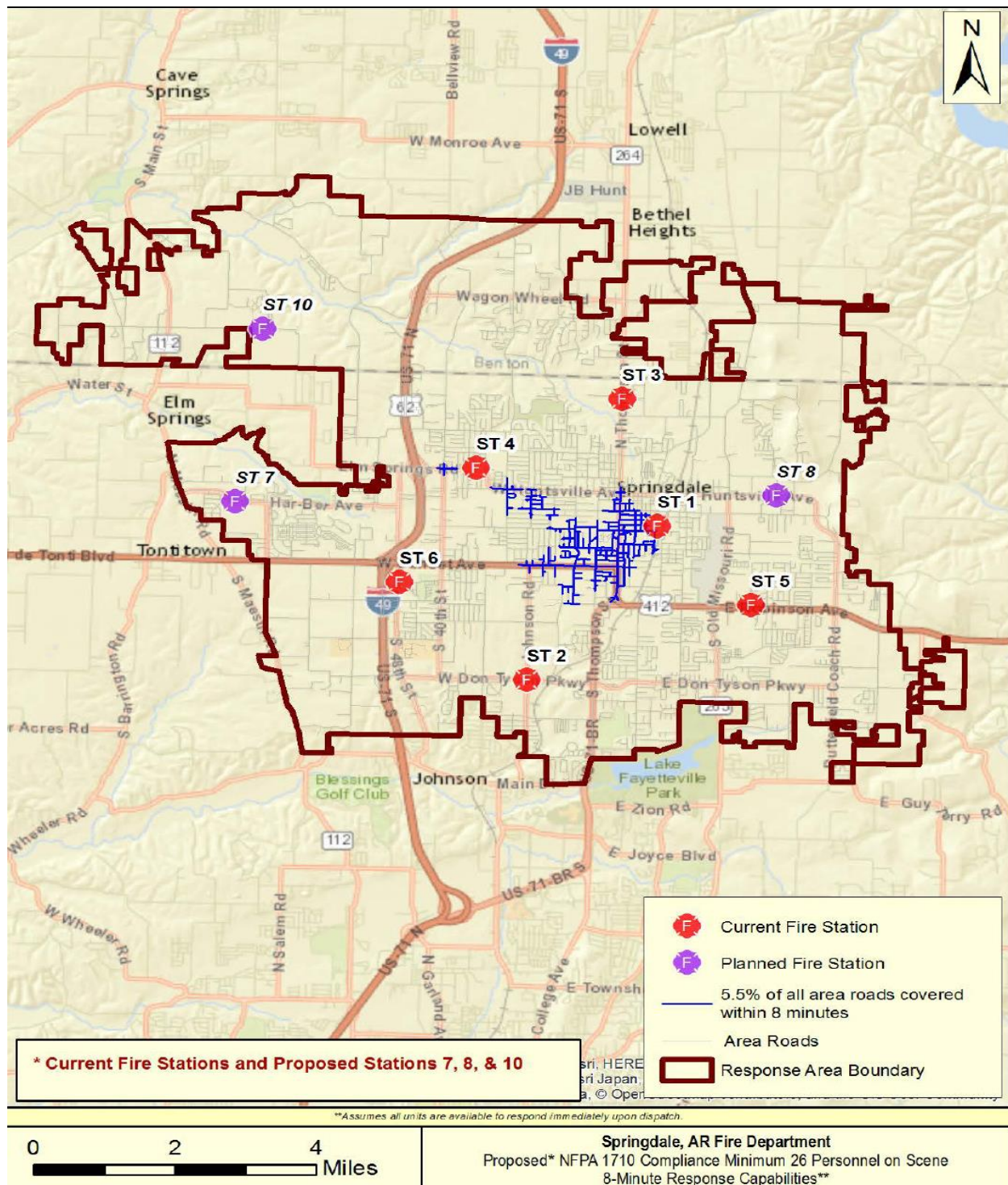


The blue lines on the map below show how much of the city could be covered in the event of a moderate risk fire that requires 15 personnel if the three proposed stations are added.





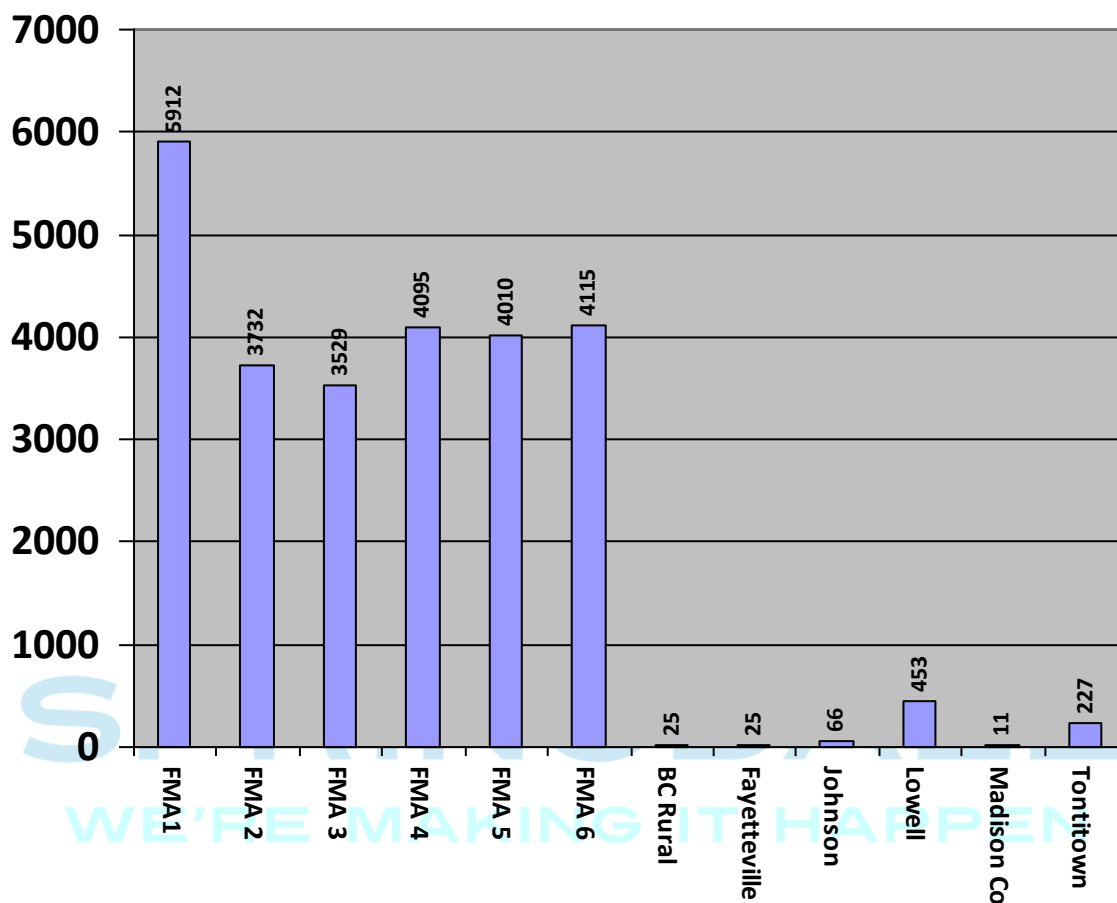
The blue lines on the map below show how much of the city could be covered in the event of a large-scale incident that requires 26 or more personnel if the three proposed stations are added.





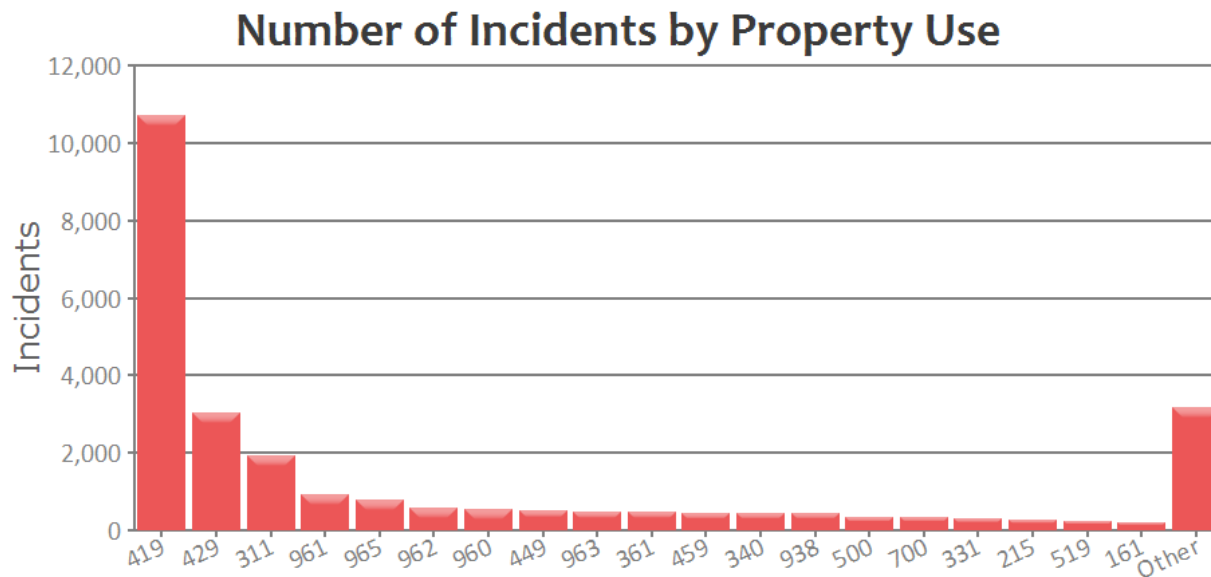
## Appendix H

The graph below illustrates the department's incidents by district from 2015-2017. Most of the responses outside of the city are due to medic unit responses prior to drawing back ambulance response areas. This should lower through attrition.



## Appendix I

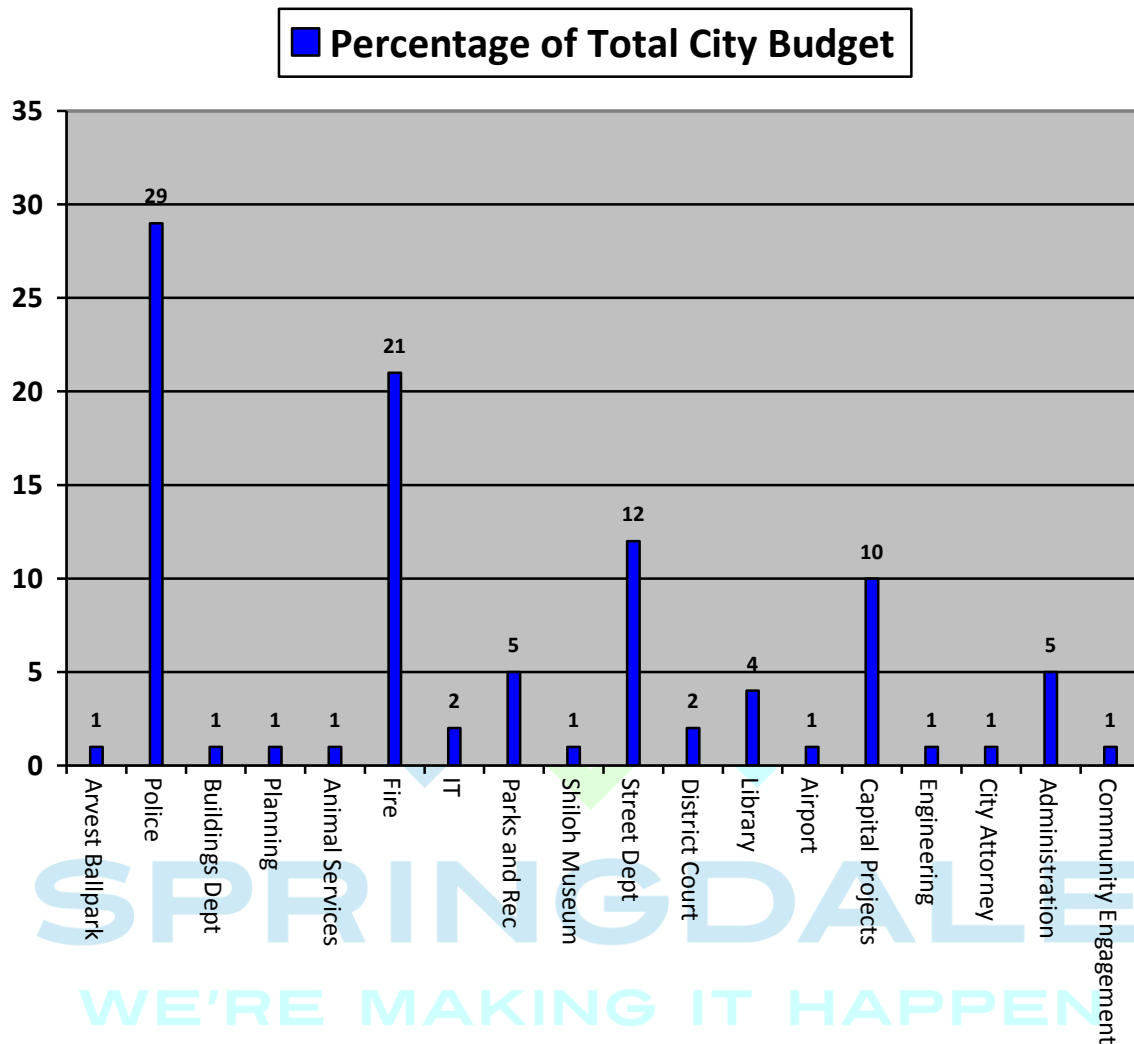
The following graph shows the number of incidents by property type. The majority of incidents take place in residential single and multi-family dwellings. Nursing homes are third.



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## Appendix J

The graph below represents the percentages of the total City of Springdale budget that is allocated to each of the city's departments.

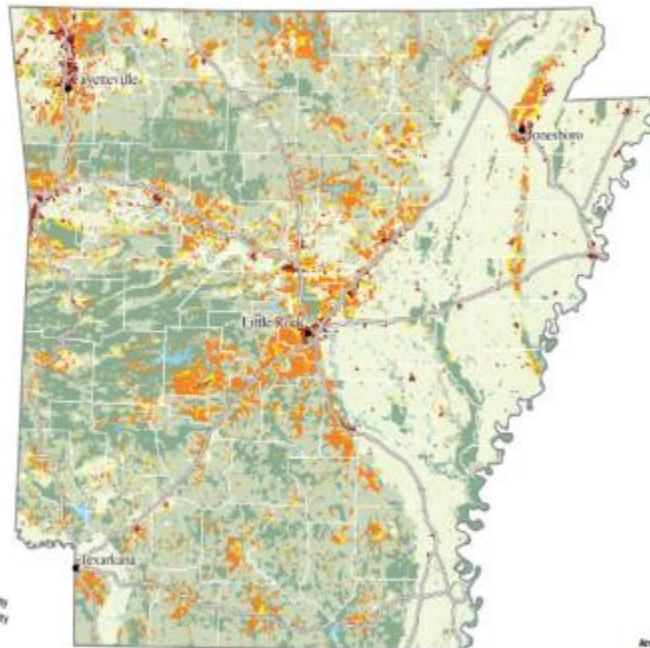


## Appendix K

Pictured below is the forest density map for the state of Arkansas. As you can see, most of the area surrounding The City of Springdale is low in forest density.

### Arkansas

Southern Region



For more information on the maps and data presented here, please refer to page 20.

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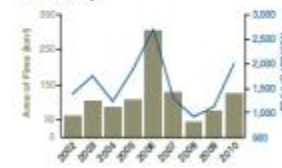
#### Population and Geography Overview

Census Data	Number	%
Population	2,915,818	
Housing units	1,315,299	
Seasonal use	38,153	3

Land Ownership	Area (km <sup>2</sup> )	%
Public-Federal	13,428	10
Public-State	3,551	3
Public-Local	0	0
Private	120,753	88

Land Cover	Area (km <sup>2</sup> )	%
Forest	62,943	48
Shrubland/herbaceous	6,104	4
Planted/cultivated	45,690	33
Developed	7,923	6
Water/wetland	14,901	11
Others	190	0
Total area	137,732	

#### Wildfire History



#### WUI in Numbers (see legend)





## Preparing for the Future

The Springdale Fire Department will remain vigilant in assessing and preparing for the hazards and risks related to Fire, EMS, HAZMAT, Rescue, and natural and artificial disasters in and around The City of Springdale. The department will utilize its inspections/prevention, training, prior staff knowledge to ensure that new risks and hazards are brought to the attention of all members of the department.

Changes to risk levels for occupancies and areas of the city will be assessed and properly categorized. This will enable the department to better prepare for new risks and ensures that The Springdale Fire Department can provide enough personnel and apparatus to mitigate a situation in a timely and efficient manner. In future assessments, the department plans to break down its assessment of FMA's into smaller areas as technology and funding become available. This will allow the department to implement responses specific to occupancies and areas of higher risk. It will also better prepare personnel to mitigate incidents as well as provide important information to the citizens.



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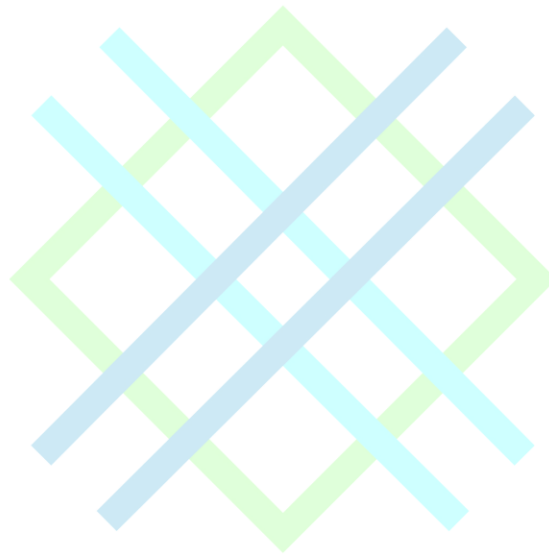
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StatsFD data analysis program



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